OXFORD ECONOMICS

Leading Independent Schools HMC

THE IMPACT OF HMC SCHOOLS ON THE UK ECONOMY

FEBRUARY 2023

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FOREWORD BY HMC

Since its inception in 1869, the Heads' Conference (HMC) has existed to provide support and assistance to members and their schools in their provision of an essential service: the education of our future generations. This work continues today as HMC works with some 354 schools in the British Isles and 44 overseas—each providing a fantastic all-round education, extensive extracurricular programmes and high-quality pastoral support.

HMC exists to:

- help members and support their schools;
- promote and protect HMC schools' independence;
- encourage and share innovation in HMC schools and more widely;
- promote the discussion of national and international educational issues; and
- influence policy and public opinion with regard to the independent sector.

HMC's strength lies in the diversity of its membership. The association includes boarding and day schools; single sex, co-educational and diamond schools, schools that are fully independent as well as grammar and state-funded schools in Northern Ireland. In addition, there is a blossoming group of international schools located across the globe, from Shanghai to Sao Paulo. HMC schools have always been significant contributors to their local and regional economies, and they build upon the social and cultural values of their communities. This report goes a long way to identify the scope, range and impact of those contributions.

Due to the inconsistency of available data, this report only considers the economic and social impact of HMC schools in England, Wales and Scotland. The snapshot it provides, whilst impressive, is merely a proportion of the impact of HMC as a whole.

HMC schools' impact on the UK economy is highly significant: supporting tens of thousands of jobs, pumping billions into the economy and contributing significant sums in taxation. The schools' work in helping to educate the next generation of thinkers, activists, sports stars, artists and others is hard to calculate, but no less significant. The report also highlights how HMC schools are reducing their reliance on fossil fuels at a faster rate than many other sectors, and are in turn investing in 'greener' sources of energy.

Inevitably this report is limited in showing only HMC's past—the impact the organisation has had to date. It says nothing of our schools' impact on future generations of young people, future contributions to the UK economy, future contributions to cultural capital and 'Brand Britain'. As HMC continues to develop, our schools will continue to grow and diversify. As we share ideas, innovate and partner schools in the UK and across the world, we hope to leverage our substantial educational capital to the benefit of all.

EXECUTIVE SUMMARY

HMC schools make a significant contribution to the national economy, and to their local economies and communities. In 2021, according to independent economic analysis as set out in this report:

- HMC schools made a **£7.3 billion contribution to the UK economy.** That is equivalent to 0.4% of total UK GDP in that year, and to the total economic activity generated in a city the size of Derby.

£7.3 billion

HMC schools' contribution to UK production (GVA) in 2021, taking the knock-on impact of spending on goods, services, and salaries into account.

This supported 142,240 jobs, and £2.2 billion in taxes.

- The activities of HMC schools also have a significant impact on UK employment. In 2021, they **supported more than 142,000 jobs** across the country, equivalent to the total population of Preston.
- HMC schools also generated **£2.2 billion in tax revenues** for the UK exchequer. That is sufficient to fund the salaries of nearly 60,000 full-time nurses.

£4.4 billion

Savings to the UK taxpayer as a result of pupils attending an independent school, instead of taking up a state-funded school place.

HMC schools' share of that total is £1.8 billion.

- Scaling the results up to all independent schools across the UK, we estimate their total economic footprint to have been **£16.5 billion, associated with over 328,000 jobs**—equivalent to the population of Nottingham—**and £5.1 billion in tax revenues.**
- The study also found that independent schools **saved the taxpayer £4.4 billion in 2021** by providing places for pupils who could otherwise be expected to take up a place in the state-funded sector. The HMC schools' share of that total is £1.8 billion.

This study investigated the impact of HMC schools[1], and that of the independent schools' sector more widely, on the UK economy in 2021. It considers the economic activity taking place in the schools, and the activity supported right across the economy by the schools' spending on goods, services, capital projects, and salaries. It also considers the effect of Covid-19 and Brexit on HMC schools' economic impact in 2021, and analyses their impact on the environment in recent years.

ECONOMIC FOOTPRINT

The £7.3 billion total contribution to the "gross value added" measure of UK production (GVA) is made up of three elements.[2] The direct GVA impact reflects the value of the work undertaken by HMC schools' own teaching and support staff, as reflected in the cost of employing them, and the financial surpluses generated as a result, in order to cover the schools' capital costs. This amounted to £3.6 billion.

But the schools' impact on the UK economy does not end there. They purchase goods and services from third parties, often in their local area, including construction companies, IT support service providers, school equipment suppliers, contract catering firms, and self-employed music and sports instructors, amongst many others. This generates GVA for those businesses, and for their suppliers in turn, and this so-called "indirect GVA impact" is estimated at £0.9 billion in 2021.

[1] The term "HMC schools" used in this report should be seen as shorthand for "schools whose head teachers are members of HMC".
[2] GVA is the standard measure of economic production for a business, industry, or sector, and (as explained in Chapter 1) is a similar concept to gross domestic product (GDP).

Furthermore, the schools' teachers and support staff, and workers in their supply chain, will spend their take-home pay in shops, restaurants, and leisure outlets, and on utilities and household services, supporting further production in the UK consumer economy. This so-called "induced GVA impact" is estimated to have contributed a further £2.8 billion to the total economic footprint in 2021.

Altogether, this means that, for every £100 million of GVA generated directly by HMC schools, an extra £104 million is supported by supply chain links and salary-funded expenditure. As the total GVA impact is, therefore, just over twice the direct GVA impact alone, the GVA multiplier is just over two.

The 142,240 jobs supported by HMC schools across the country include:

- 75,660 teachers and support staff directly employed by the schools themselves;
- 16,560 indirect jobs in the supply chain, supported by their procurement of goods and services from third party businesses; and
- 50,020 induced jobs supported in the UK consumer economy, by the salary-funded spending of school and supply chain staff.

The £2.2 billion in tax revenues for the UK exchequer was made up of:

- Some £1.0 billion in direct taxes, paid by HMC schools themselves, and by their staff on their salaries;
- Another £0.2 billion of indirect taxation collected along the schools' supply chain; and
- £1.0 billion of induced taxation generated by the salary-funded spending of employees.

SAVINGS FOR THE TAXPAYER

If independent school pupils took up the state school places to which they were entitled instead, then the British taxpayer would have to bear significant extra costs. We estimate that independent schools save the British taxpayer at least £4.4 billion annually. The share of HMC schools in this saving is £1.8 billion.

This calculation considers teaching and other recurrent costs in the UK state school sector, plus capital costs associated with the use of land, construction of school buildings, and property maintenance. But it excludes central administrative costs, and is therefore likely to slightly understate the full amount of the saving.

THE IMPACT OF COVID-19 AND BREXIT

The GVA and employment impacts of HMC schools in 2021 fell short of the levels that would have prevailed had the pre-2020 "trend" growth rates continued, by an estimated 8% and 6% respectively. This was primarily driven by an 8% shortfall in average fees per pupil, estimated on the same basis. This in turn was directly associated with Covid-19-related fee discounts, allowing us to conclude that Covid-19 was the dominant cause of the GVA and employment "losses".

8% **Shortfall in economic output in 2021, mainly due to the impact of Covid-19 on HMC school activity and parents' finances.**

By contrast, recent trends in pupil numbers by nationality suggest that any short-term "Brexit effect" was very limited. However, it does not necessarily follow that there will be no significant impact in the long-term—if, for example, changes in visa arrangements resulted in EU pupil numbers growing at a slower pace than otherwise.

ENVIRONMENTAL IMPACTS

The study also estimates the environmental impact of HMC schools. In 2021, HMC schools' total greenhouse gas (GHG) emissions amounted to 437,000 tonnes, in terms of carbon dioxide equivalent (CO_2e), taking their own activity and that of their global supply chain into account. The impact in the UK alone was 294,000 tonnes, or 0.07% of total UK emissions. This is around one-third of the 0.21% share of HMC schools and their supply chain in total UK GVA, indicating that the schools are 'greener' than the average UK sector, in terms of GHG emissions relative to each unit of economic activity supported (a measure of "emissions intensity"). The emissions intensity of HMC schools fell by a significant 28% between 2015 and 2021.

0.07%

HMC schools' share of all carbon emissions across the UK in 2021—just one third of HMC school's share of national economic production.

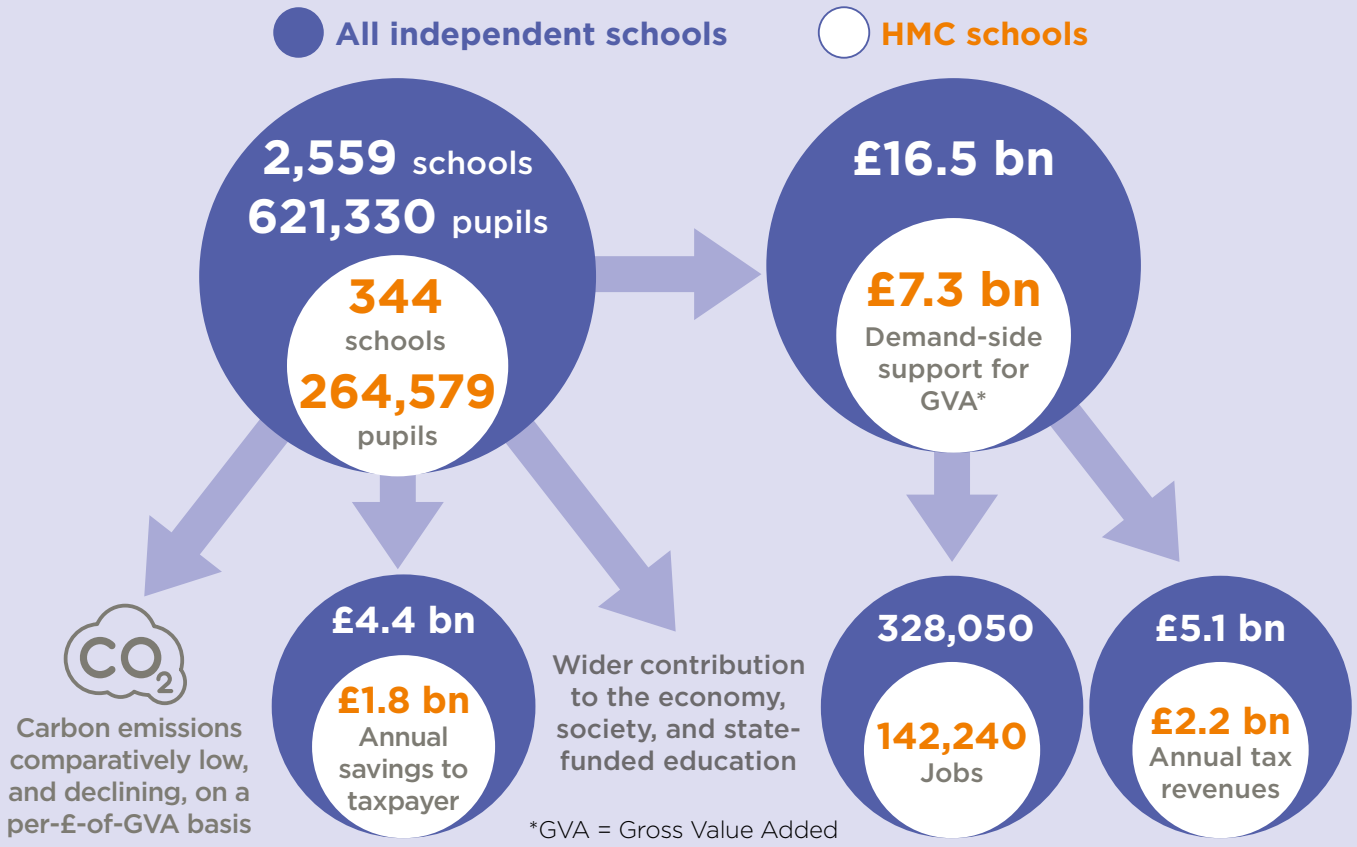
Although these modelled trends are driven by an assumption that emissions moved in line with those of the wider education sector, this is indeed likely to have been the case, given the examples of environmentally-friendly initiatives carried out by the schools and reported in this study.

ABOUT HMC

HMC is a professional association of heads of some of the world's leading independent schools, and is one of seven bodies affiliated to the Independent Schools Council (ISC). In early 2022, 298 individuals were full HMC members, leading 354 schools across the UK, Channel Islands and Isle of Man.[3] These schools educated some 273,000 pupils, accounting for 50% of all pupils being educated at schools connected to the ISC.

[3] Some HMC members lead groups of schools.

THE IMPACT OF INDEPENDENT SCHOOLS ON THE UK ECONOMY



THE ECONOMIC IMPACT OF HMC SCHOOLS

£7.3 BILLION

Contribution to GVA measure of economic production, equivalent to **0.4% of total UK GVA**, and GVA produced in a city the size of **Derby**.

£1.8 BILLION

Annual savings to the taxpayer, enough to pay the state pensions of **220,000 retired people**.

142,240 JOBS

Similar to the **total population of Preston**.

£2.2 BILLION

Annual tax revenues, equivalent to **£78 per household**, and sufficient to fund the annual pay of **60,000 nurses**.

24%

Fall in HMC schools' greenhouse gas emissions per pupil, including those of their global supply chain, between 2015 and 2021.

0.7%

Share of total UK greenhouse gas emissions accounted for by HMC schools and their supply chain, contrasting with these entities' **0.21%** share of UK GVA.

1. INTRODUCTION

This report, prepared by Oxford Economics and commissioned by HMC, examines the contribution that HMC schools, and the wider independent schools sector, made to the UK economy in 2021. It has been produced in tandem with a report on the impact of all schools affiliated to the Independent Schools Council (ISC), which includes HMC schools amongst others.[4] That report for the ISC in turn updated a previous study published in 2018, relating to the situation in 2017.

Two sets of benefits for the wider economy are examined:

- **HMC schools' contribution to national economic production (GVA), jobs, and tax revenues,** due to the activity taking place in HMC schools, activity in the supply chain stimulated by the schools' purchases of goods, services, and capital assets, and activity in the wider economy supported by the salary-funded spending of school and supply chain staff.
- **Savings for the British taxpayer**, because most pupils at HMC schools are entitled to, but do not take up, a place at a state-funded school.

In addition, the study examines the extent to which the estimates for the latest year—calendar year 2021—might have been affected by **Covid-19 and Brexit**. It further looks at the schools' **environmental impact**, considering the schools' own greenhouse gas emissions and energy use, and that of the schools' entire UK and global supply chain.

1.1 INTRODUCTION TO HMC AND THE UK INDEPENDENT SCHOOLS SECTOR

The main focus of this report is on the contribution to the UK economy of independent schools whose Heads are members of HMC, which is a professional association of headteachers of some of the world's leading independent schools. It is one of seven bodies affiliated to the Independent Schools Council (ISC).

As of early 2022, 298 individuals were full members of HMC, in the British Isles, leading 354 schools—as HMC members can, and increasingly do, lead groups of schools. These members include the heads of co-educational schools, single-sex schools, and "diamond schools" where both single-sex and co-educational teaching take place. The association also includes heads of schools with a particular religious affiliation, or with dedicated provision for children with special educational needs.

As Fig. 1 shows, schools led by an HMC member were educating some 273,000 pupils in early 2022, accounting for 50% of all pupils then attending schools with an ISC connection.

[4] Oxford Economics, The impact of independent schools on the UK economy, December 2022.

Fig. 1: HMC and ISC schools and pupils in the UK, Channel Islands and Isle of Man, January 2022

	Number of schools		Number of pupils		
	HMC	All ISC	HMC	All ISC	HMC as % ISC
England	315	1,315	238,576	498,734	47.8%
Scotland	24	34	22,257	25,451	87.5%
Wales	5	19	3,746	7,432	50.4%
Northern Ireland	6	10	6,562	8,012	81.9%
Channel Islands and Isle of Man	4	10	2,080	4,687	44.4%
Total	**354**	**1,388**	**273,221**	**544,316**	**50.2%**
O/w: Non-state-funded in the UK*	344	1,371	264,579	531,991	49.7%

*This excludes seven ISC schools in Northern Ireland which are partly state-funded (including all six HMC schools there), and schools in the Channel Islands and Isle of Man. The analysis in Chapters 2-5 of this report relates to HMC schools located in the UK that are non-state-funded.

Source: HMC via ISC. HMC school data are consistent with the ISC census and annual report 2022, and reflect the position in January 2022.

Looking at the distribution of school pupils more broadly, in the UK, independent schools account for 5.8% of all pupils.[5] Within that total, independent schools with an ISC connection account for 5.0% of all UK pupils, and independent HMC schools, for 2.5%. (The HMC pupil number here, of just under 265,000 excludes those at schools in Northern Ireland, which are partly state-funded, and those at schools in the Channel Islands and Isle of Man.)

Fig. 2: Distribution of UK school pupils by sector, January 2022

	England	Scotland	Wales	Northern Ireland	Total UK	% of total
Independent HMC schools	238,576	22,257	3,746	0	264,579	2.5%
Other independent ISC schools	260,158	3,194	3,686	374	267,412	2.5%
All independent ISC schools	498,734	25,451	7,432	374	531,991	5.0%
Non-ISC independent schools	82,693	3,581	2,423	342	89,039	0.8%
All independent schools	581,427	29,032	9,855	716	621,030	5.8%
State-funded schools	8,414,639	796,326	474,724	348,491	10,034,180	94.1%
Overall total*	**9,000,031**	**825,358**	**484,579**	**349,207**	**10,659,175**	**100.0%**

*The The England and UK totals also include 3,965 pupils at non-maintained special schools.

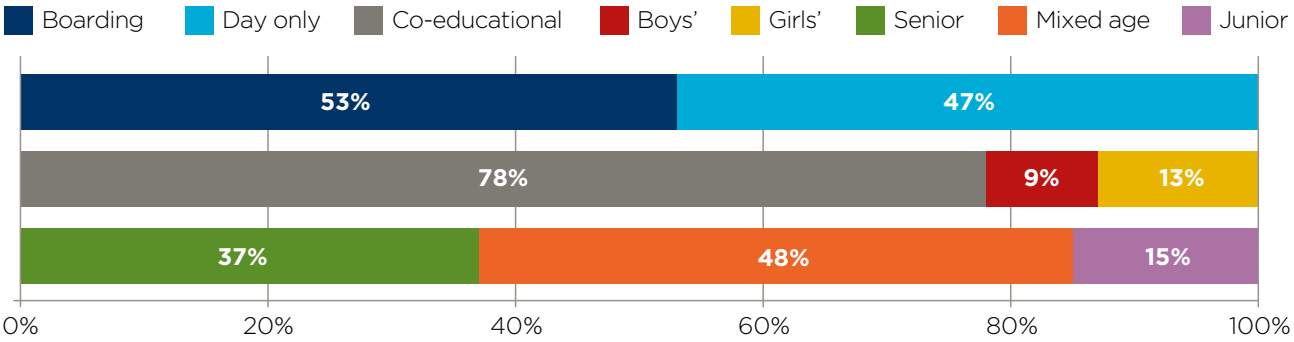
Source: HMC; ISC; Department for Education; Scottish Independent Schools Council; gov.scot; StatsWales; Department of Education (Northern Ireland).

[5] Fig. 2 provides a snapshot of the distribution of school pupils in the UK as of January 2022. This however does not reflect the proportion of pupils who may move between independent and state schools in the course of the academic year.

There are many types of school in HMC membership, and they are spread across the country. Some 53% of schools allow boarders (see Fig. 3), with boarding school pupils accounting for 17% of all HMC school pupils. Around 78% of the schools are co-educational, with 9% classified as boys' schools and 13% as girls' schools. The schools cater for children and teenagers, from pre-primary school age up to 19 years old, and mixed-age schools—taking in pupils of senior and junior ages—account for 48%. The average (mean) number of pupils per school is 772, although there is considerable variation around that. For comparison, schools affiliated to the ISC but not to HMC are significantly smaller, with an average of 262 pupils, and have a significantly lower proportion of boarders, at 7%.

All 354 HMC schools across the UK, Channel Islands and Isle of Man operate on a not-for-profit basis. To put that in context, 75% of all ISC schools operate on that basis, and 66% of non-HMC ISC schools. Some 94% of HMC schools have formal partnership arrangements with schools in the state sector, whether they be academic, sporting, pastoral, or teacher-focused.

Fig. 3: Select characteristics of HMC schools



Source: HMC; ISC; Oxford Economics

1.2 SCOPE OF THE STUDY

This study covers the impact of the 344 independent HMC schools located in the UK.[6] The analysis looks at HMC schools' economic footprint in the UK (explained in Section 1.3 below), as well as the savings made by the taxpayer as a result of the schools' existence. It also analyses the possible impact of Covid-19 and Brexit on the latest estimates of HMC schools' size and impact, and the schools' environmental effects.

For the economic footprint and taxpayer savings analysis, the starting point is income-per-pupil and cost-per-pupil data for the academic year ending in August 2021. These data are then scaled to the number of HMC pupils in January 2022. The results therefore give an indication of HMC schools' impact in calendar year 2021.

The estimates are constructed to take into account differences between type of school (e.g., primary, secondary, or special), between regions, and (for the taxpayer savings analysis) between parents' nationality and country of residence. Estimates for the impact of all independent schools are also given, although these are extrapolated from the estimates for all independent schools affiliated to the ISC, based on the ratio of pupil numbers on a region-by-region basis.

[6] The six HMC schools in Northern Ireland are therefore excluded on the grounds that they are partly state-funded, while the four schools in the Channel Islands and Isle of Man are excluded due to being outside of the UK.

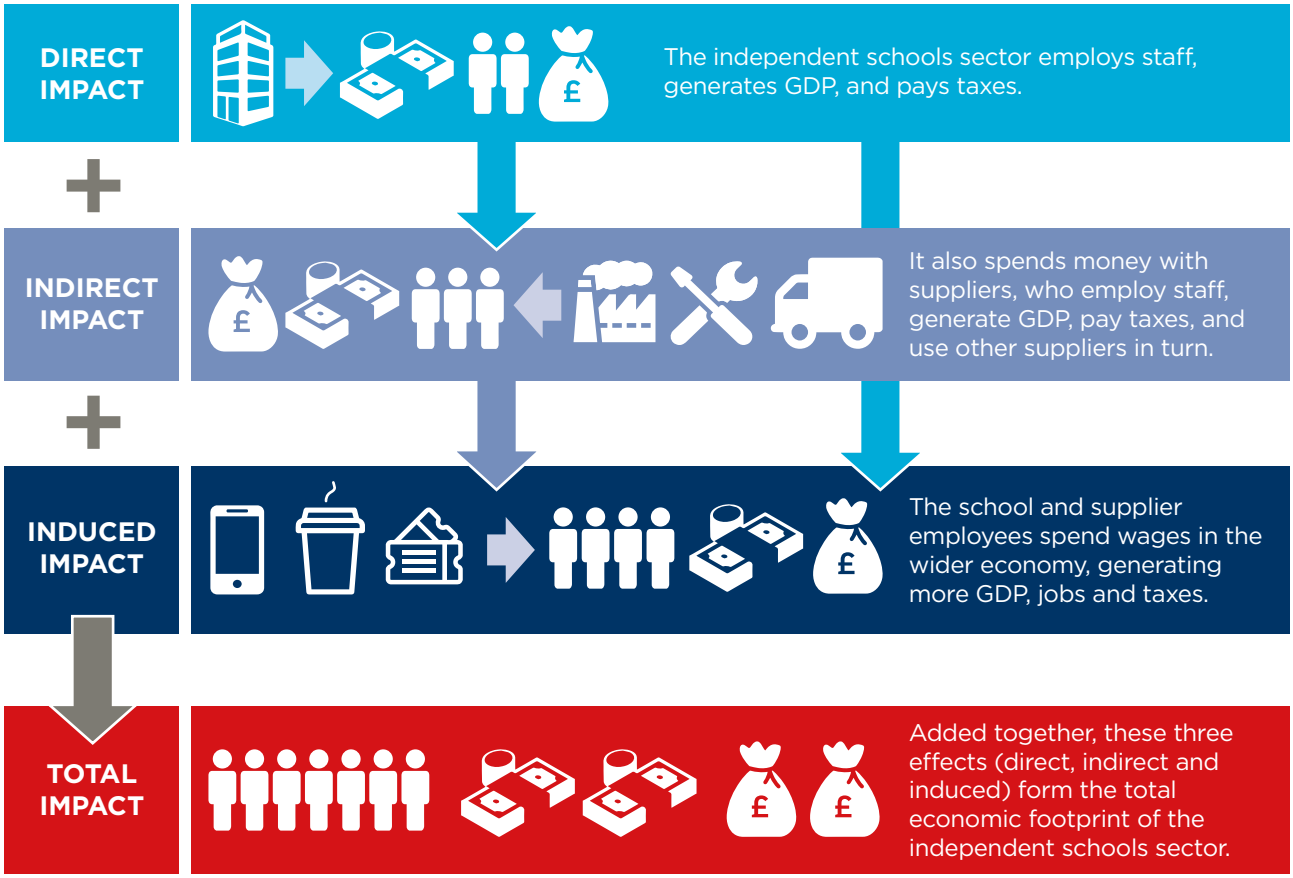
1.3 INTRODUCTION TO ECONOMIC IMPACT ASSESSMENT

The "economic footprint" analysis looks beyond the headline "size of the sector" metrics to quantify the wider contribution that HMC schools make to the UK economy. This uses a standard economic impact assessment framework, which quantifies this footprint across three channels:

- **Direct impact**—the economic activity undertaken by the schools themselves.
- **Indirect (supply chain) impact**—the activity supported throughout the UK supply chain, as a result of the schools' procurement of goods and services from third-party suppliers. This considers the impact of spending relating to the day-to-day running of the schools, including spending on supply teachers and outsourced catering, as well as the impact of capital spending on construction work, and computers and other equipment.
- **Induced (salary-funded expenditure) impact**—the wider economic benefits that arise when the school staff, and workers in their supply chain, spend their earnings, for example in retail and leisure establishments.

The way that the direct, indirect, and induced channels relate to each other is illustrated in Fig. 4. The environmental impacts, set out in Chapter 5, are derived alongside these economic impacts in the way described in that chapter.

Fig. 4: Channels of economic impact



The economic footprint of HMC schools is quantified using three metrics. These are:

- **The gross value added measure of economic production (GVA).**[7] In the case of direct GVA, this is the value of the education, accommodation, catering, and welfare services that the schools provide to their pupils, minus the value of day-to-day (non-capital) goods and services purchased from third parties. This is broadly equivalent to HMC schools' employment costs, plus the gross surplus made on its operating activities, which is mainly used to cover the cost of past capital spending.
- **Employment**—measured on a headcount basis, to facilitate comparison with employment data for other industries. This includes self-employed as well as employee jobs in the indirect and induced channels.
- **Tax revenue**—encompassing all taxes on salaries, profits, business activity, and business supplies, and (in the induced channel) those on employee spending.

The calculations are undertaken on a gross basis. This means they do not take account of the economic activity displaced from other sectors. Nor do they attempt to quantify the productiveness of deploying the resources concerned in HMC schools, and in their supply chain, relative to alternative potential uses. This is a standard approach for undertaking economic impact appraisal.

1.4 ADDITIONAL ECONOMIC AND SOCIAL BENEFITS OF HMC AND INDEPENDENT SCHOOLS

It is important to note that the benefits of HMC and other independent schools, to the UK economy and society, are by no means confined to the economic footprint. The box below summarises a range of other benefits, quantifiable and non-quantifiable, including those beyond the scope of this study.

1.5 STRUCTURE OF THE REPORT

The remainder of this report is structured as follows:

- **Chapter 2** sets out the economic footprint of the independent HMC schools, and of the wider independent schools sector, in the UK in 2021.
- **Chapter 3** describes the value of the savings made by the UK taxpayer in that year, as a result of school pupils eligible for a UK state school place attending an HMC school instead.
- **Chapter 4** explores the possible impact of Covid-19 and Brexit on the values estimated for 2021, by comparing the actual findings with a hypothetical alternative situation, in which the economic footprint continued to grow, in 2020 and 2021, at the pre-2020 "trend" rate.
- **Chapter 5** discusses the environmental impact of HMC schools, both directly and as a result of the activity stimulated throughout their global supply chain.
- **Appendix 1** summarises the main results in tabular form.
- **Appendix 2** summarises the methodology.

[7] GVA is a similar concept to gross domestic product (GDP), except that the former is valued at the "basic prices" received by suppliers, net of sales taxes such as VAT and excise duties, while the latter is valued at the "market prices" paid by the purchaser, including those taxes. GDP is the measure typically used for national economic production, but GVA is usually used in relation to the contribution of an individual business, industry, or sector.

ADDITIONAL ECONOMIC AND SOCIAL BENEFITS OF HMC AND INDEPENDENT SCHOOLS

Contribution to the public sector and wider community:

- **Savings to the taxpayer**, due to pupils eligible for a free UK state school place attending an HMC school instead. These savings are additional to the tax revenues generated by the schools' activities, captured in the economic footprint in Chapter 2 of this report, and are quantified in Chapter 3.
- **Contributions to the local community** through partnerships with state schools and local organisations. This can include sharing classrooms, sharing IT, sports and catering facilities, seconding teaching staff, and sponsoring state academies.
- **Means-tested discounts on school fees.** As of January 2022, 8.5% of pupils at ISC schools (including HMC schools along with others) benefited from means-tested fee discounts. These discounts are valued at £480 million per annum, and now account for 50% of the value of all fee discounts funded by schools in ISC membership. Over a third of all pupils at HMC member schools receive some type of fee assistance, and more than 54% of the pupils at ISC schools who receive fee assistance direct from school are at HMC member schools. The average value of a means-tested bursary at HMC member schools in early 2022 was £13,059 per annum. This was 3.2% higher than a year earlier, and £2,219 more than the equivalent funding across all ISC schools.

Contribution to long-term economic growth and living standards:

- **The schools' strong focus on scientific subjects,** which are in high demand amongst graduate employers. This will support the UK's future productivity performance, and benefit UK and global living standards, by educating pioneers in the scientific, engineering, and medical fields, to follow in the footsteps of Alan Turing, Tim Berners-Lee, Rosalind Franklin, Francis Crick, and the many others educated at HMC schools in the past. HMC had 23,217 A-Level candidates in 2022, equal to 71% of total A level candidates from ISC schools. Many of these pupils have gone on to study STEM subjects at university.

Contribution of international pupils at British independent schools:

- **Contribution to the UK's soft power overseas,** by enhancing links with other countries, including by educating future world leaders and influencers. Overseas political leaders who attended HMC schools in the UK include the first prime minister of India, Jawaharlal Nehru, as well as King Hussein of Jordan, amongst many others.
- **Spending by international school pupils** outside of the schools, and spending by friends and relatives visiting the UK from their home countries. This adds to demand in the local economies around HMC schools. This spending, thought to be considerable, is beyond the scope of this study.
- **Continued education at UK universities.** UK universities, and their local economies, will benefit when overseas pupils choose to move on to higher education in the UK.

Additional contribution to UK earnings from overseas:

- **Spending by tourists attracted to the UK** by the presence of iconic HMC schools.

Contribution of British schools located overseas:

- **Generation of additional funds for the UK.** The ISC estimates that there are some 6,000 UK-orientated schools overseas, in many cases paying salaries to British staff, purchasing UK-sourced goods and services, and/or generating surpluses to be repatriated to the UK. The Heads of 49 overseas schools are members of HMC.
- **Provision of experience to teachers** who subsequently work in the UK. The two-way flow of teachers between the UK and overseas education systems will facilitate the sharing of skills, knowledge, and ideas across international borders.

2. THE ECONOMIC FOOTPRINT OF HMC AND INDEPENDENT SCHOOLS

This chapter analyses the economic impact of HMC schools, and the wider independent schools sector, on the UK economy in 2021, in terms of supporting GVA, employment, and taxation.[8]

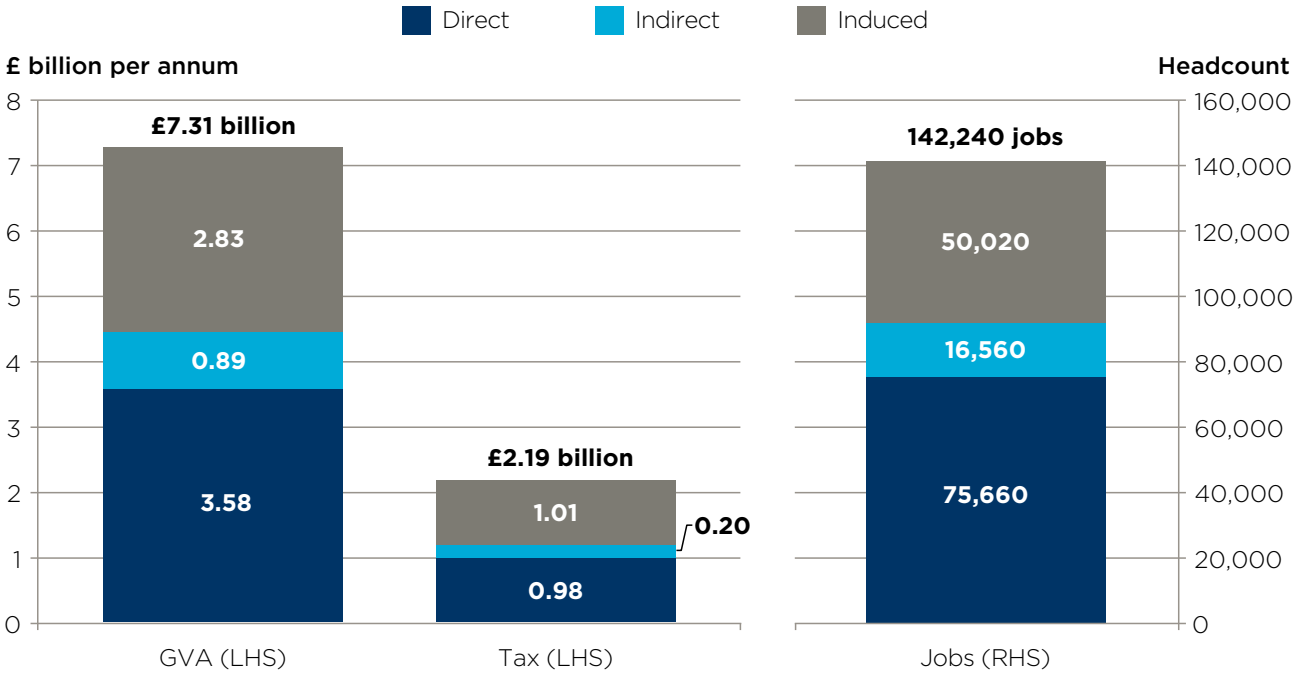
2.1 THE ECONOMIC FOOTPRINT: KEY FINDINGS

In 2021, HMC schools made a total GVA contribution to the UK economy of £7.3 billion (see Fig. 5)[9], taking the direct (own activity), indirect (supply chain), and induced (salary-funded spending) impacts into account. **This equated to 0.4% of UK GVA in the same year, and is comparable to the GVA generated across a city the size of Derby.** It also accounted for 52% of the GVA impact of all ISC schools, reflecting the fact that HMC schools account for 50% of all ISC school pupils, and the fact that average fees per pupil are higher than the ISC average, due to both the higher proportion of senior schools (which have higher fees) and the higher share of HMC pupils who are boarders.

This activity was associated with 142,240 jobs, which is similar to the total population of Preston. It also supported a total tax contribution of £2.2 billion, sufficient to fund the pay of almost 60,000 nurses.[10]

The overall independent schools sector generated £16.5 billion of GVA in 2021, supporting 328,080 jobs—a similar number to the total population of Nottingham—**and £5.1 billion in tax revenues** (see Fig. 6).

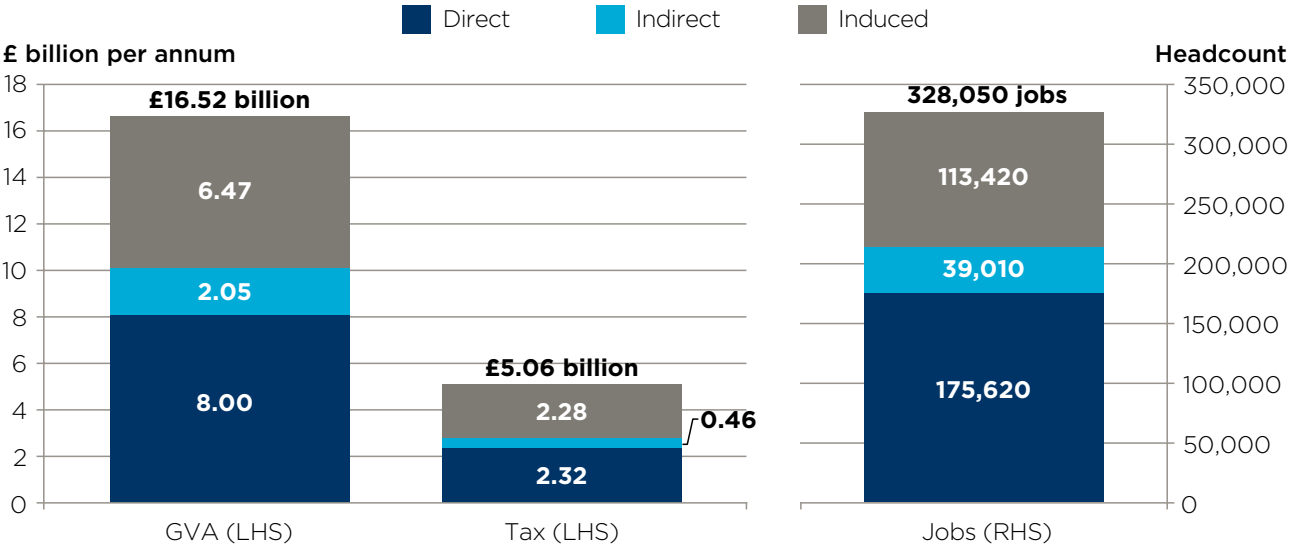
Fig. 5: The total economic footprint of HMC schools, 2021



Source: Oxford Economics

[8] The GVA and employment estimates are based on data provided by Baines Cutler Solutions Ltd, as well as data provided by HMC and ISC.
[9] In this and all other charts and tables in the report, where the total appears to differ to the sum of the components, this simply reflects the effect of rounding.
[10] Full-time nurses on average UK pay for that occupation in 2021, calculated using ONS data from the Annual Survey of Hours and Earnings ("ASHE").

Fig. 6: The total economic footprint of all independent schools, 2021



Source: Oxford Economics

2.2 THE SCHOOLS' INCOME, COSTS, AND DIRECT GVA

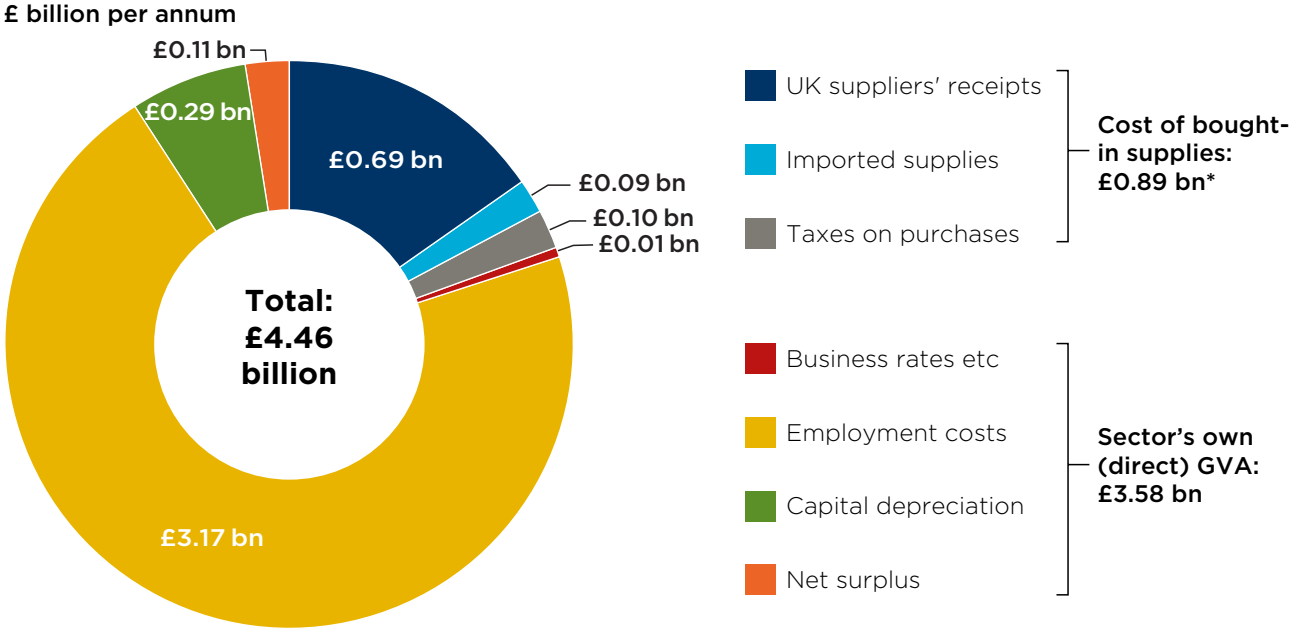
The starting point for the economic impacts set out above is provided by information on the schools' core (fee) income, and the ways in which that income is spent on goods, services, and salaries. In 2021, the core operations of HMC schools (i.e. excluding trading, fundraising, and financing activities) generated £4.5 billion in income, as shown in Fig. 7. Income from trading, fundraising, and financing activities provided an additional £200 million on top of that, taking income from all sources to £4.7 billion. The total income of all independent schools is estimated to have been £10.4 billion, of which £9.9 billion related to core operations.

Fig. 7: Overview of income and costs of HMC and all independent schools in 2021

£ million, 2021	Income	Costs	Net surplus
HMC schools			
Main school operations	4,460	4,352	108
Trading, fundraising, and financing	200	129	71
Total of all activities	**4,660**	**4,481**	**179**
All ISC schools			
Main school operations	8,563	8,326	237
Trading, fundraising, and financing	380	239	141
Total of all activities	**8,943**	**8,565**	**378**

Source: Baines Cutler Solutions Ltd; ISC; HMC; Oxford Economics

Fig. 8: Use of HMC school operating income by economic category, 2021



Source: Oxford Economics; Baines Cutler Solutions Ltd; ISC

*This excludes capital supplies.

The uses of that income are shown in Fig. 8. Some £0.9 billion was spent on day-to-day (i.e. non-capital) purchases of goods and services from third parties, in order to run the schools, and deducting this from core fee income allows us to arrive at the schools' direct GVA contribution.

HMC schools are therefore estimated to have made a direct GVA contribution to the UK economy of £3.6 billion in 2021. The vast majority (89%) of that is accounted for by the £3.2 billion of staffing costs, with most of the remainder taken by the gross financial surplus needed to cover capital depreciation—i.e. the cost of past capital spending, which is spread over a number of future years in business and economic accounts. The direct GVA generated by HMC schools is similar in size to that of each of the Gloucester and Lincoln local authority areas.

The wider independent schools sector made an estimated direct GVA contribution of £8.0 billion in the same year.

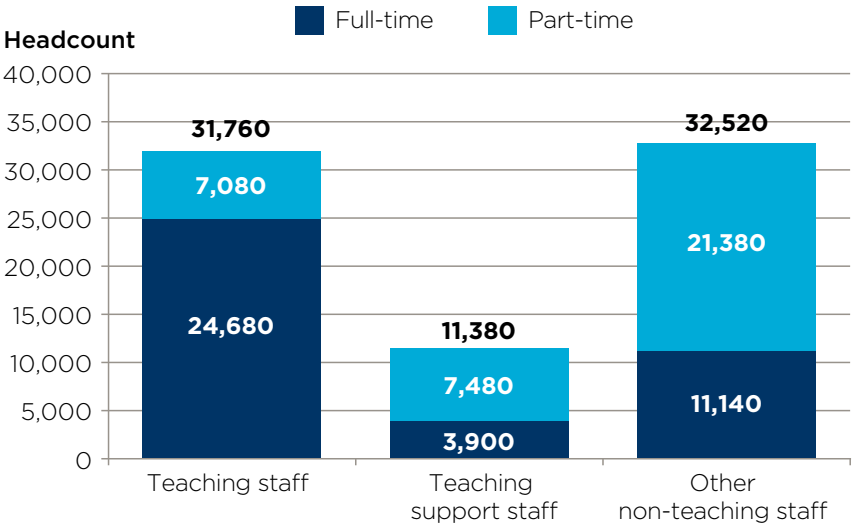
2.3 DIRECT EMPLOYMENT AND STAFF REMUNERATION

In 2021, HMC schools directly employed an estimated 75,660 staff.[11] Of this total, 31,760 (42%) are teaching staff, and 11,380 (15%) teaching support staff, while 32,520 (43%) work in other supporting roles such as catering and welfare (see Fig. 9).[12] Of the total number of staff, 39,720 (52%) work full-time and 35,940 (48%) are estimated to be employed on a part-time basis.

The total number of staff directly employed by HMC schools is equivalent to the total the population of Carlisle, and comparable to employment in the UK telecommunications services sector.

All independent schools in the UK are estimated to have directly employed 175,620 staff in 2021, which is a greater number than the population of York.

Fig. 9: Total directly employed HMC school staff by role and contract type, 2021



Source: Baines Cutler Solutions Ltd; Oxford Economics; ISC

In addition to this direct employment, Oxford Economics estimates that HMC schools engaged 2,820 contracted-out catering workers in 2021, based on the Baines Cutler dataset. While these roles are essentially the same as those of the directly-employed catering staff, these individuals are included in the indirect (supply chain) jobs impact, rather than in the direct jobs figure. A breakdown of HMC schools' estimated employment is outlined in Fig. 10.

Fig. 10: Estimate of HMC school employment, 2021

HMC schools in UK	Full-time workers	Part-time workers	Total workers	Full-time equivalent
Teaching staff	24,680	7,080	31,760	28,870
Teaching support staff	3,900	7,480	11,380	8,280
Other support staff	11,140	21,380	32,520	23,670
Total directly-employed staff	39,720	35,940	75,660	60,820
Contracted-out catering staff	970	1,850	2,820	2,050
Total of all workers	**40,690**	**37,790**	**78,480**	**62,870**

Source: Baines Cutler Solutions Ltd; Oxford Economics; HMC via ISC

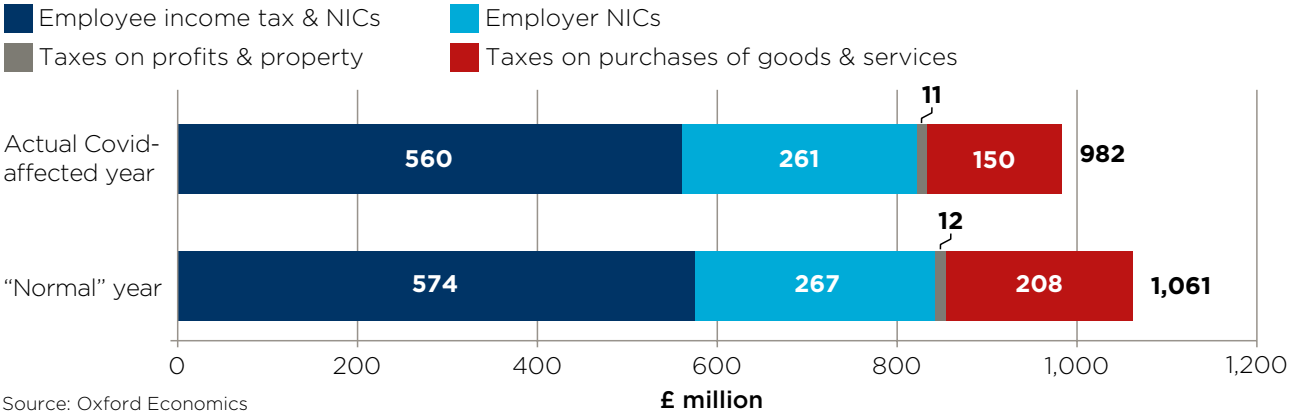
[11] The full-time equivalent (FTE) figure for HMC schools in 2021 is 60,820.
[12] The classification is based on that of Baines Cutler Solutions Ltd, where "teaching support staff" include e.g., laboratory technicians, employed sports coaches, and librarians, etc, as well as teaching and classroom assistants.

2.4 DIRECT TAX IMPACTS

In 2021, HMC schools are estimated to have paid almost £1.0 billion in direct taxation, with the direct tax contribution of all independent schools estimated to have been £2.3 billion.[13] Some 57% of HMC's direct tax impact was accounted for by employees' income tax and National Insurance Contributions (NICs), with employers' NICs accounting for a further 27% (see Fig. 11). School fees are exempt from VAT, but this also means that VAT added by third party suppliers cannot be reclaimed. Consequently, taxes on purchases of goods and services, including capital projects and capital equipment, accounted for 15% of the direct tax total.

However, it is worth stressing that these tax payments were depressed in 2021, as the schools' income and activities were restricted by the Covid-19 pandemic. In fact we estimate that, had pre-2020 growth trends continued in 2020 and 2021—making 2021 a more "normal" year—then the direct tax impact would have been closer to £1.1 billion for HMC schools. In the event, taxes related to the schools' direct GVA—mainly those on salaries—were almost 4% lower than they would have been in the absence of Covid. But taxes on purchases of goods and services (mainly unrefunded VAT), including those on capital projects and equipment, disappointed by considerably more than that, in proportionate terms.

Fig. 11: Estimated tax payments by HMC schools: actual 2021 out-turn and "normal" year



Source: Oxford Economics

2.5 THE PATTERN OF PROCUREMENT AND INDIRECT ECONOMIC IMPACTS

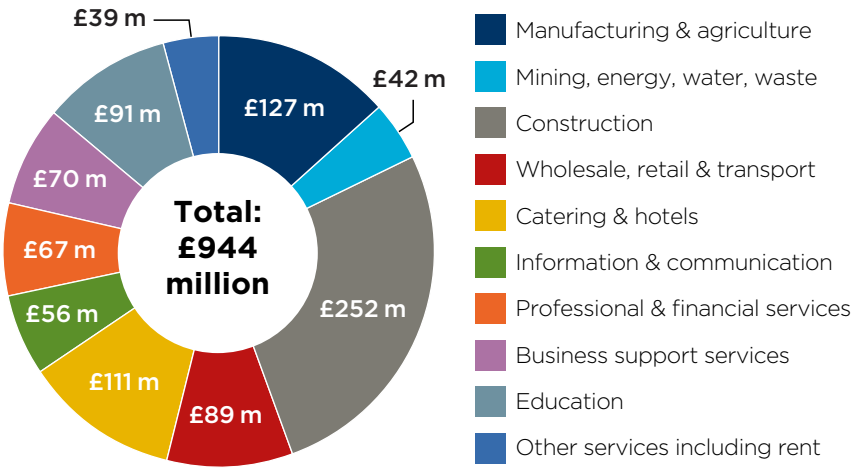
This section analyses the indirect impact supported by HMC schools. This impact is supported by the schools' purchases of goods and services from suppliers throughout the UK. In turn, the schools' suppliers make purchases from other domestic firms, stimulating further activity along the supply chain.

In 2021, HMC schools are estimated to have spent £1.08 billion on UK-sourced supplies across a range of sectors, with the suppliers receiving £0.94 billion after VAT and excise duties (see Fig. 12). Within the latter total, £0.69 billion (74%) is classed as operational spending, on inputs to be used up during the year, whilst the remaining £0.25 billion (26%) is spent on capital items expected to last longer (such as construction work and computer equipment).

[13] The direct tax impact is defined to include taxes paid by the schools' employees, and taxes added to the cost of business supplies by the schools' suppliers (mainly unrefunded VAT), as well as taxes levied on the schools themselves and paid directly to the authorities. All of the tax estimates have been modelled by Oxford Economics, based on income and spending patterns, and the main features of the UK tax system as it applies to the schools.

Fig. 12: Value to UK suppliers of purchases by HMC schools, 2021, by industry

£ million



Source: Oxford Economics

HMC schools are estimated to have spent around £252 million with firms in the construction sector (27% of total domestic spending), a further £91 million (10%) with other parts of the education sector (such as self-employed sports and music instructors), £111 million (12%) with catering firms (mainly the contracted-out work), and £127 million (13%) with the manufacturing and agriculture sectors.[14]

The indirect GVA supported by HMC schools' purchases from domestic suppliers was £0.9 billion in 2021 (see Fig. 13). This impact was felt across several sectors. Some £188 million (21%) of this impact occurred in the construction sector, £136 million in the wholesale, retail and transport sector, and £109 million in the professional and financial services sector.

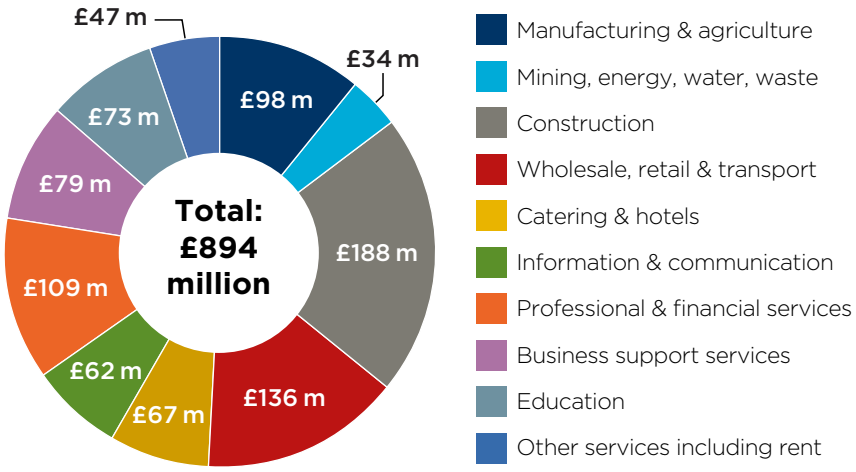
The total indirect GVA supported by the entire independent schools sector is estimated to have been £2.1 billion in 2021.

The activity along the schools' domestic supply chain also supported 16,560 indirect jobs in 2021 (see Fig. 14). This is equivalent to the population of Aberystwyth. Some 3,200 jobs were supported in the catering sector, an additional 2,570 in the wholesale, retail, and transport industries, and 2,110 in business support services. The pattern of indirect jobs by sector differs significantly from the pattern of GVA, reflecting sharp variations in GVA per job (a crude measure of labour productivity) between industries.

An estimated 39,010 indirect jobs were supported by the entire independent schools sector in 2021, which is more than the total population of Windsor.

Fig. 13: Gross value added supported by HMC schools' procurement, by sector of supplier

£ million

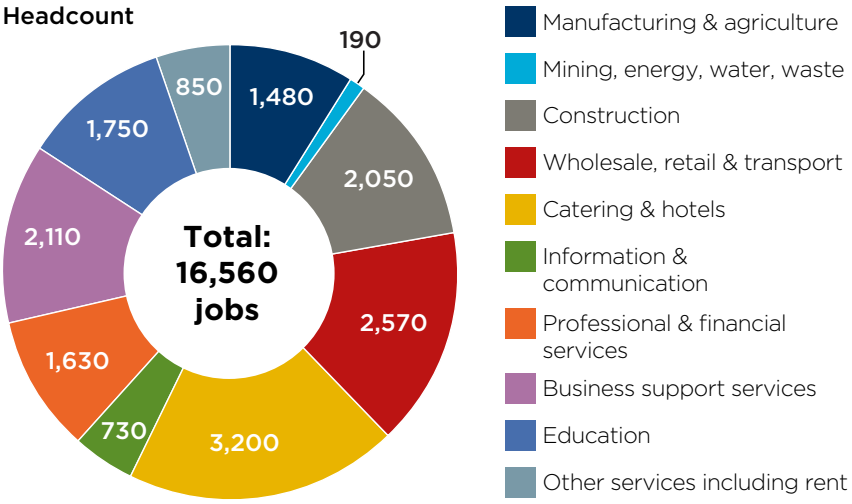


Source: Oxford Economics

[14] Details of the industry classification can be found in a table in Appendix 1. For procurement of goods, the value is split between the producing sector (mainly manufacturing), and the retail and wholesale sector.

The indirect tax contribution supported by HMC was £201 million in 2021. Within that total, employees' income tax and NICs accounted for £88 million (44%), taxes on business purchases, property, and profits for £70 million (35%), and employer NICs for £34 million (17%). **The indirect tax impact supported across the independent schools sector as a whole is put at £455 million.**

Fig. 14: Indirect employment of HMC schools by sector of supplier



Source: Oxford Economics

2.6 INDUCED ECONOMIC IMPACTS

This section summarises the induced economic activity supported by HMC schools in 2021. This impact is derived from the payment of staff salaries by HMC schools, and by the businesses in their UK supply chain (out of the proceeds of their sales to the schools). The employees in turn spend a proportion of their salaries on goods and services produced in the UK economy, and that production forms the induced GVA of HMC schools.

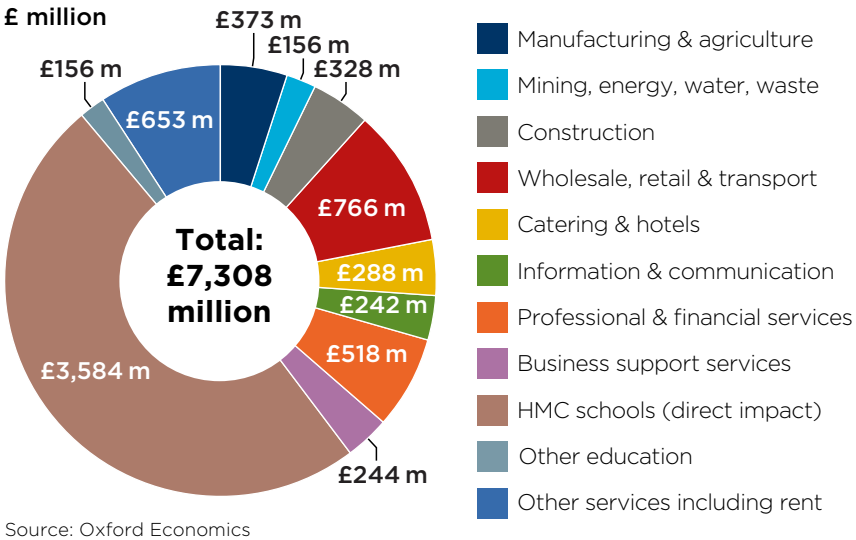
In 2021, HMC schools' induced GVA contribution was £2.8 billion, associated with 50,020 jobs—more than the population of Perth (in Scotland)—**and £1.0 billion in tax revenues.** This was driven by the schools' estimated £3.2 billion spending on staff costs, together with the payment of wages in the schools' supply chain. The induced tax impact includes taxes on employee spending (such as VAT and excise duties), as well as taxes on the business activity and staff salaries supported by that spending.

The induced GVA impact of all independent schools in the UK is estimated to have been £6.5 billion in 2021, supporting 113,420 jobs—similar to the total population of Basingstoke—**and generating £2.3 billion in tax revenues.**

2.7 TOTAL ECONOMIC FOOTPRINT IN DETAIL

Across the direct, indirect, and induced channels, HMC schools supported a total GVA contribution of £7.3 billion in 2021, equivalent to 0.4% of UK GVA in that year. Some £3.6 billion (49% of the total impact) is accounted for by the schools' direct GVA (see Fig. 15). **The remaining £3.7 billion of GVA, in the indirect and induced channels, supported economic activity across a wide range of other sectors.** As a result, 10% of the total GVA impact is accounted for by wholesale, retail, and transport activities, and 7% by professional and financial services.

Fig. 15: Total GVA contribution of HMC schools, by sector of activity, 2021



Source: Oxford Economics

The GVA multiplier is just over two, which is fairly typical for a sector providing services dependent on skilled or knowledgeable employees.[15] This reflects the fact that, for every £100 of value added activity generated directly by HMC schools, an additional £104 is supported across the rest of the UK economy.

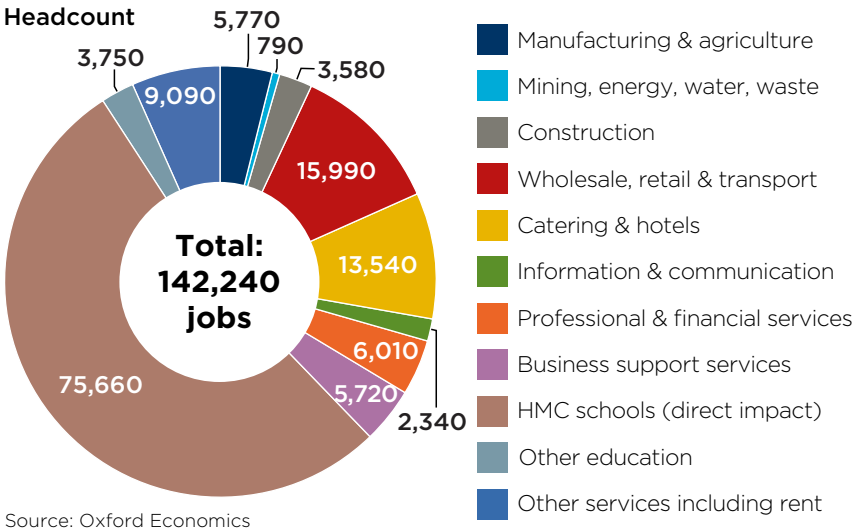
The total GVA contribution of all independent schools within the UK is estimated to have been £16.5 billion in 2021.

HMC schools also supported a total of 142,240 jobs across the UK economy in 2021, equal to the total population of Preston and accounting for 0.4% of all UK workforce jobs in that year. The 75,660 jobs directly generated by HMC schools accounted for 53% of the total impact (see Fig. 16).

The remaining 66,580 indirect and induced jobs were spread over a wide range of activities, with 11% of the total jobs impact found in the wholesale, retail, and transport field, and 10% in catering and hotels.

The total number of jobs supported across the wider independent schools sector is estimated to have been 328,050 in 2021, equivalent to the total population of Nottingham.

Fig. 16: Total employment contribution of HMC schools, by sector of activity, 2021



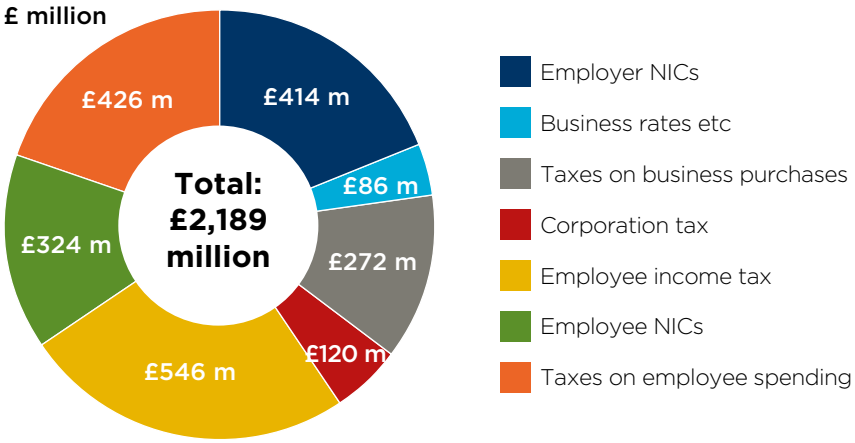
Source: Oxford Economics

[15] Multipliers are typically higher than this for sectors such as manufacturing and retail, where external inputs account for a higher proportion of the value of sales, and the employees' own inputs for a lower proportion.

Finally, in 2021, £2.2 billion of tax contributions to the UK exchequer were associated with HMC schools, equal to 0.2% of all tax receipts in that year, and to £78 per UK household. This would be enough to fund nearly 60,000 full-time nurses. Some £869 million (equal to 40% of the total tax supported by HMC schools) is accounted for by employees' income tax and NICs (see Fig. 17). An additional £479 million (22%) reflects taxes on business purchases, property and profits, with employer NICs accounting for £414 million (19%), and taxes on employee spending for £426 million (19%).

The total estimated tax contribution of all UK independent schools was £5.1 billion in 2021.

Fig. 17: Total tax contribution of HMC schools, by type of tax, 2021



Source: Oxford Economics


Founded on Partnerships
FOUNDING PARTNERS
Reach Academy
Feltham
HAMPTON
SCHOOL
ELAM
STUDENT

3. SAVINGS TO THE TAXPAYER

This chapter sets out the annual savings made by Government, and therefore the taxpayer, as a result of HMC school pupils not taking up the free UK state school places to which they would otherwise be entitled. These estimates take into account:

- The number of pupils at HMC schools entitled to a UK school place in 2021 (set out in Section 3.2 further below).
- Average recurrent spending per pupil by state schools and trusts in that year (Section 3.3).
- Adjustments to per-pupil costs to reflect the mix of pupils by school type, region, and background, and existing state support for HMC school pupils (Section 3.4).
- The state capital outlays—on land acquisition, building work, and subsequent maintenance—that would also be required if HMC pupils took up a state school place (Section 3.5).

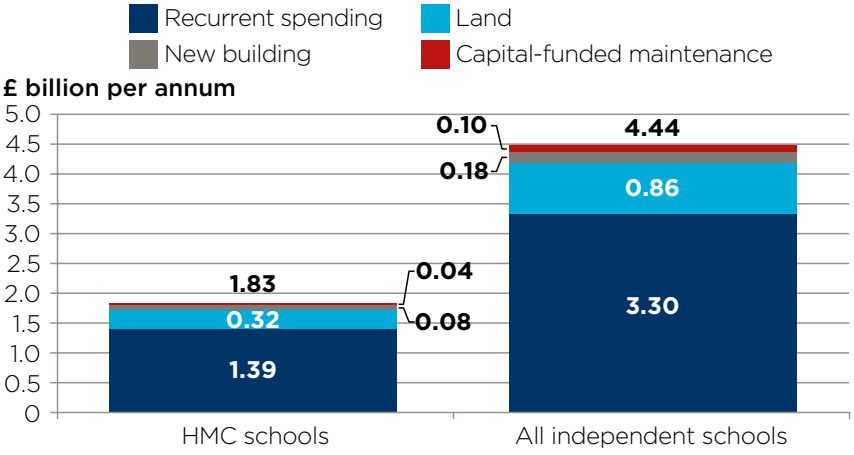
The estimates arrived at in this way should be seen as minimum estimates of the taxpayer savings supported. Potential additional (but unquantifiable) savings, over and above those amounts, are explored in Section 3.6. The methodology underlying the calculations is included in Appendix 2.

3.1 SAVINGS TO THE TAXPAYER: KEY FINDINGS

The key finding is that the taxpayer saving made in 2021, as a result of pupils attending an HMC school, was £1.8 billion, with the saving relating to all independent school pupils put at £4.4 billion (see Fig. 18).

As the chart shows, the day-to-day running costs of state schooling (recurrent spending) account for the majority of the total estimated taxpayer saving, but potential land costs (on an annualised basis) are fairly significant too.

Fig. 18: Overview of taxpayer savings in 2021



Source: Oxford Economics

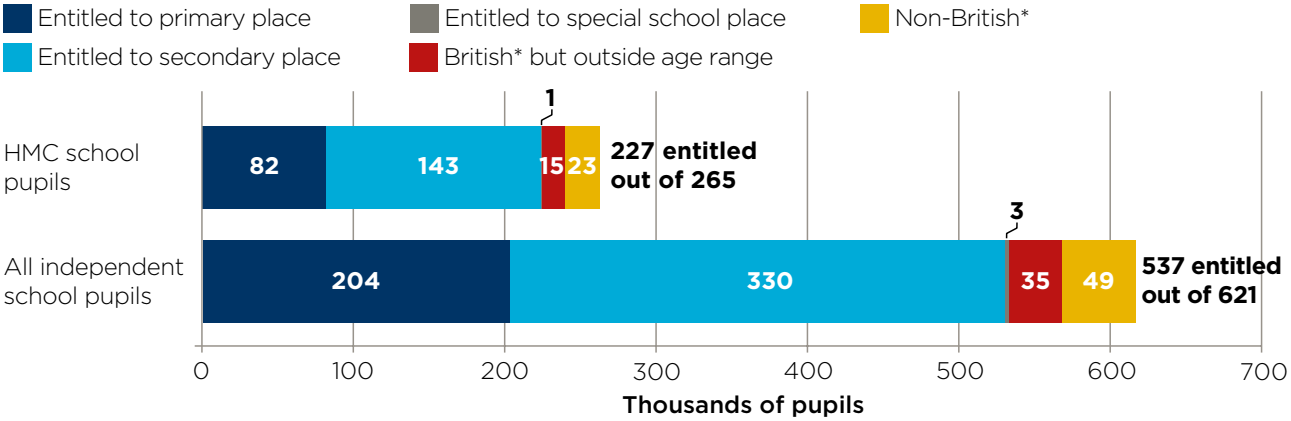
3.2 HMC AND INDEPENDENT SCHOOL PUPILS ENTITLED TO A UK STATE SCHOOL PLACE

We estimate that, of the 265,000 pupils attending independent UK HMC schools in January 2022, 227,000 would have been entitled to a UK state school place. This figure is equivalent to the population of Aberdeen. It includes all pupils who are British nationals, and those from EEA countries whose parents are UK residents, subject to them being in the eligible age range (i.e., aged at least four but no more than 18 on the eve of the school year, 31 August). Some 23,000 pupils would have been ineligible on the grounds of nationality and/or parents' residence, with the remaining 15,000 pupils (mostly of nursery school age) ineligible on the grounds of age alone.

Fig. 19 shows this breakdown, with a split between primary, secondary, and special school places, which affects the cost savings estimates.[16] The chart also shows how, based on these estimates, somewhere in the region of 537,000 independent school pupils would have qualified for a UK state school place, out of the 621,000 total.

[16] The allocation of HMC school pupils to special schools is an estimate of the number likely to attend a special school if they moved into the state school sector. The split between primary and secondary is based on age.

Fig. 19: Eligibility of independent school pupils for a free UK state school place



Source: Oxford Economics

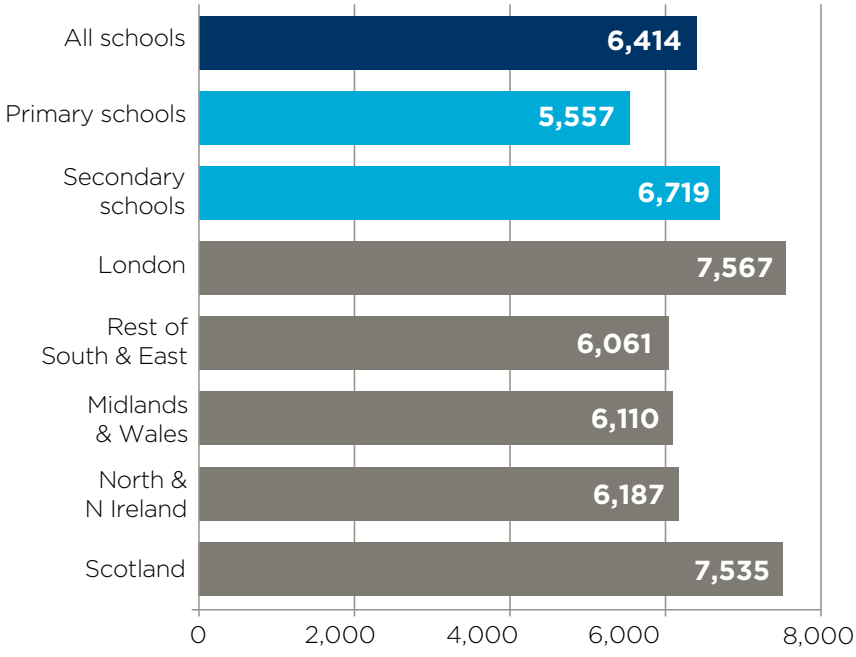
*For these purposes 'British' includes EEA nationals whose parents are UK residents.

3.3 RECURRENT SPENDING PER PUPIL BY STATE-FUNDED SCHOOLS AND TRUSTS

Recurrent spending per state school pupil across the UK is estimated to have been £6,414 in 2021, based on data for school and trust expenditure and pupil numbers from various official sources. This figure includes all state primary, secondary, and special schools. But it excludes nursery schools, and is net of spending funded out of non-state sources.

As Fig. 20 shows, spending per head was somewhat higher in secondary schools than in primary schools. It was significantly higher than the average in the case of special schools, but as they only account for a small share of all schools, their effect on the overall average is limited. Estimates at the regional level should be viewed as approximations, due to data limitations. But the pattern in very broad terms looks to be one in which spending per pupil is clearly above-average in London and Scotland, at just over £7,500, with all of the other regions and countries in the £5,400-£6,500 range.

Fig. 20: Recurrent school and trust spending per pupil in 2021



Source: Oxford Economics

3.4 TAXPAYER SAVINGS DUE TO RECURRENT SCHOOL SPENDING

To arrive at the taxpayer saving per eligible HMC school pupil[17], from average school spending per state school pupil, four adjustments are needed, as follows:

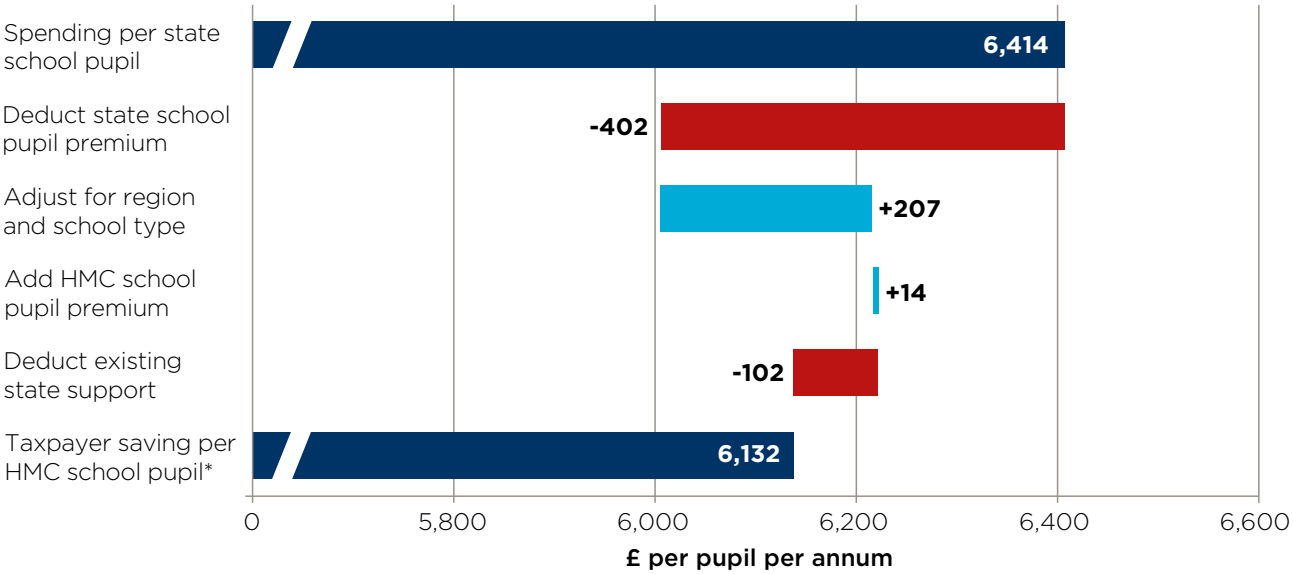
1. The pupil premium for state schools must be deducted, as the share of HMC school pupils potentially eligible is far lower than the share of state school pupils qualifying at present.
2. The net cost per pupil needs to be worked out separately, for each type of school in each region, and combined with the number of HMC school pupils in each of those categories, to arrive at the average for HMC school pupils rather than state school pupils.
3. The pupil premium should then be added back for HMC pupils likely to qualify for it.
4. Existing state funding for HMC school pupils should then be deducted.

Fig. 21 illustrates this calculation. The regional and school type mix pushes up the estimated taxpayer saving per pupil a little, driven by the relatively high share of HMC pupils accounted for by secondary schools, and (though less significantly) schools in London (see Fig. 22). But this is more than offset by the adjustments for the pupil premium, and existing state support for pupils at HMC schools.

The estimate for taxpayer savings relating to recurrent state expenditure on schools (as opposed to capital spending) is £1.4 billion. This is calculated by multiplying the per-pupil saving of £6,132 with the number of eligible HMC pupils (227,000).

The corresponding figure for all eligible independent school pupils is £3.3 billion, taking the different pattern of pupils by region into account.

Fig. 21: Derivation of taxpayer savings per HMC pupil from spending per state school pupil

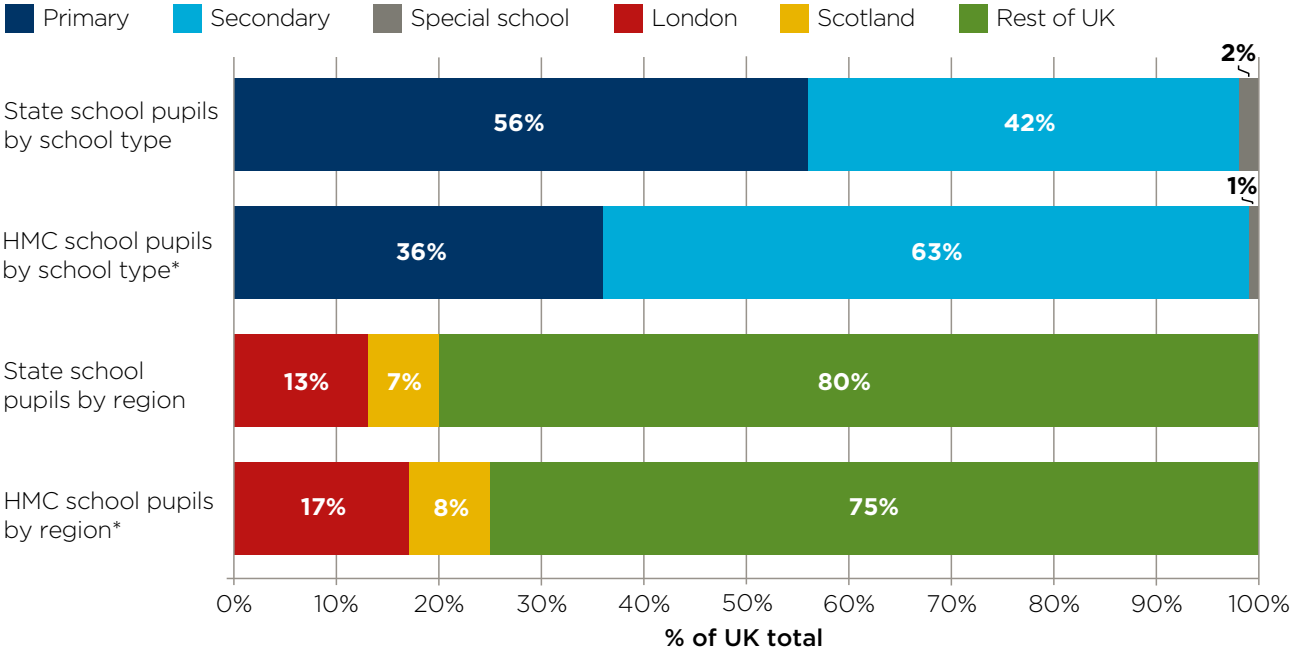


Source: Oxford Economics

*HMC school pupils eligible for a UK state school place.

[17] In this chapter, "eligible HMC school pupil" means a pupil eligible for a UK state school place.

Fig. 22: State and HMC school pupils by type and location of school



Source: Oxford Economics

*HMC school pupils eligible for a UK state school place.

3.5 TAXPAYER SAVINGS DUE TO CAPITAL OUTLAYS

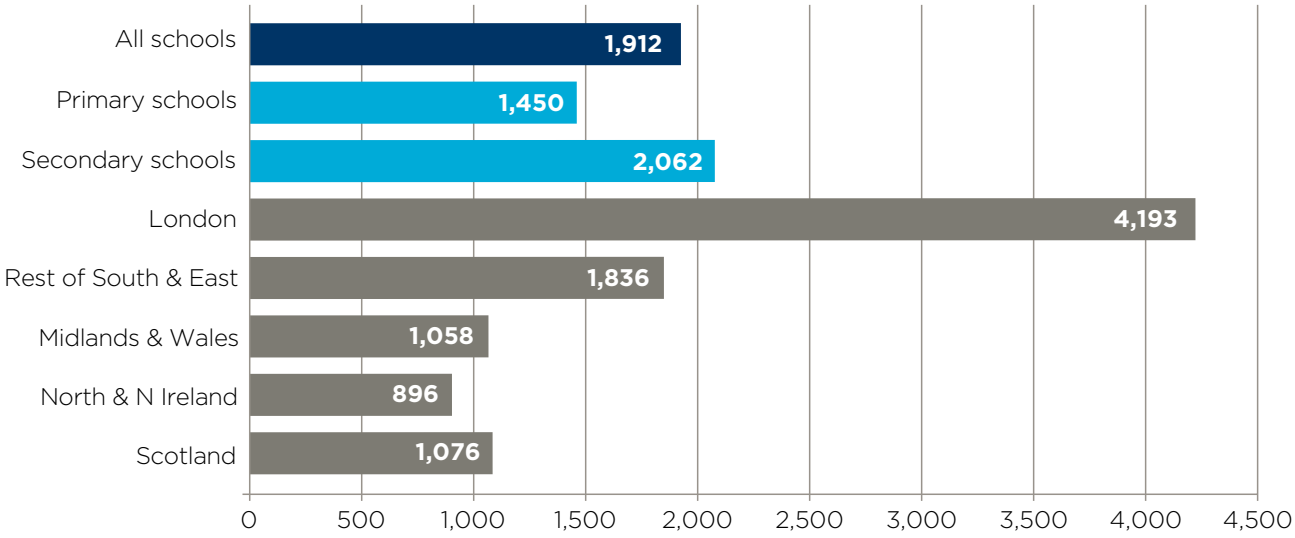
If a significant number of HMC school pupils moved into the state school sector, then the state would need to build or purchase new schools, requiring it to also acquire or set aside land—probably in higher-cost residential rather than industrial areas—and provide extra capital budgets to fund the subsequent building repair work required from time to time.

Details of how the estimated savings on capital spending were derived, and data sources, are included in Appendix 2, but the key points are as follows:

1. Given the number of eligible HMC school pupils, around 475 new schools would be needed across the country.
2. This would require nearly 1,400 hectares of land, at a cost of around £6.4 billion.
3. Based on the annual rental value of the land, the cost would be £316 million per year, or £1,392 per HMC school pupil per year.
4. The required new school buildings would cost £3.8 billion, or £75 million per year assuming a 50-year lifespan—equivalent to £332 per pupil per year.
5. The cost of school building repair and maintenance work is estimated to be £43 million per annum, or £189 per pupil per year.

Total capital-related taxpayer savings for HMC school pupils therefore amounted to £435 million per annum, or £1,912 for each HMC pupil not taking up their state school sector. Variations by school type and regional grouping are illustrated in Fig. 23. The average estimated annual taxpayer saving per pupil varies quite markedly by region, and excluding London the national average would be £1,458. **The capital-related taxpayer saving for all independent school pupils is estimated to have been £1.14 billion.**

Fig. 23: Annualised capital-related taxpayer savings per eligible HMC school pupil in 2021



Source: Oxford Economics

3.6 POTENTIAL ADDITIONAL TAXPAYER SAVINGS

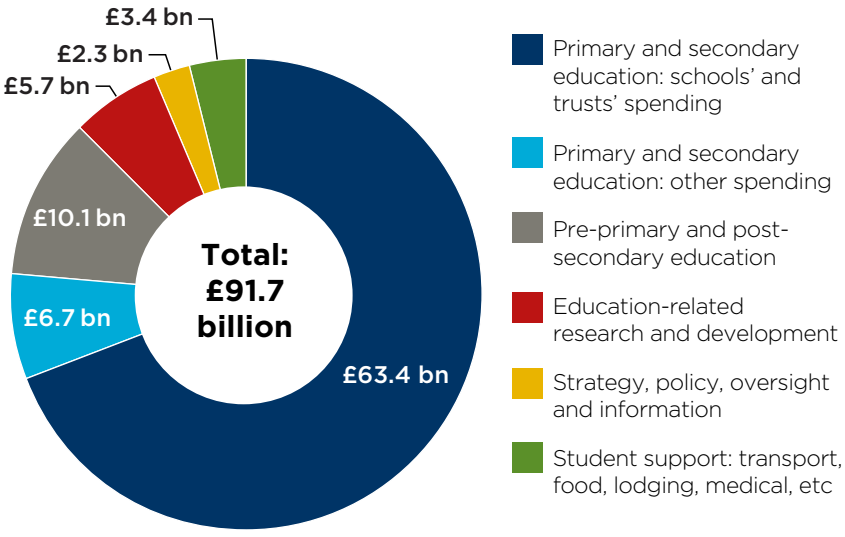
The recurrent costs for state school spending set out in Section 3.3 above relate to state-funded spending by local authority maintained schools and academy trusts at the primary and secondary levels, including central spending not allocated to individual schools in the case of multi-academy trusts. This equates to £63.4 billion in total, for 2021.

However, based on data in the key Treasury public expenditure report, we estimate that net recurrent spending on state primary and secondary education, by all parts of the UK Government, would have been around £70.1 billion in that year. The "missing" £6.7 billion (£680 per pupil) would cover administrative costs borne by national and local authorities, and the cost of grants and other state-funded cash support for primary and secondary school pupils.

This is shown by the light blue segment in Fig. 24, which illustrates recurrent state education spending by category.

Fig. 24: Estimated recurrent UK state spending on education in 2021, by sub-function

£ billion



Source: Oxford Economics, based on HM Treasury, Public Expenditure Statistical Analyses 2021

If the full £680 per-pupil cost translated into additional taxpayer savings, on a one-for-one basis, then the saving per HMC pupil would be pushed to £8,725, rather than £8,045. This would take the total taxpayer saving to £2.0 billion for HMC school pupils, and £4.8 billion for all independent school pupils. However, there are three reasons why that would overstate the true taxpayer saving:

- A significant, through unknown, proportion of the administrative costs will be fixed, rather than varying with pupil numbers.
- Cash support for HMC school pupils moving into the state school sector will not match those paid to existing state school pupils, due to the backgrounds of the pupil involved.
- A small portion of the cost—£23 million—reflects existing state support for HMC pupils.

Even so, give the scale and nature of the spending involved, it is almost certain that there would be some increase in these administrative and pupil support costs, if significant numbers of pupils moved from HMC schools into the state sector.

One example of taxpayer savings in this area is teacher induction, where the Independent Schools Teacher Induction Panel relieves the authorities of those costs. School inspection provides a second example, with the self-funded, not-for-profit Independent Schools Inspectorate (ISI), rather than the state-funded body Ofsted, undertaking inspections of ISC schools in England. Here, we estimate that the state saved £3.0 million in the financial year ending March 2021, as a result of not having to inspect HMC and other ISC schools. The saving in relation to all independent schools was £4.1 million, considering the cost to Ofsted of inspecting non-ISC independent schools, and the fees paid to Ofsted by those schools. (These costs would have been higher had it not been for Covid-19 restrictions, which limited inspections in 2021.)

Finally, state pupils at primary and secondary school levels may benefit from at least a small share of the non-cash support provided to pupils and students (transport, food, lodging and medical, etc, shown by the green segment in Fig. 24), in a way that independent school pupils do not. Local authority provision of home-to-school transport for qualifying pupils, specifically attending state rather than independent schools, provides a concrete example of that.

4. THE IMPACT OF COVID-19 AND BREXIT

This Chapter explores the potential effect of Covid-19 and Brexit on HMC schools' economic impact in 2021.

4.1 THE IMPACT OF COVID-19 AND BREXIT: KEY FINDINGS

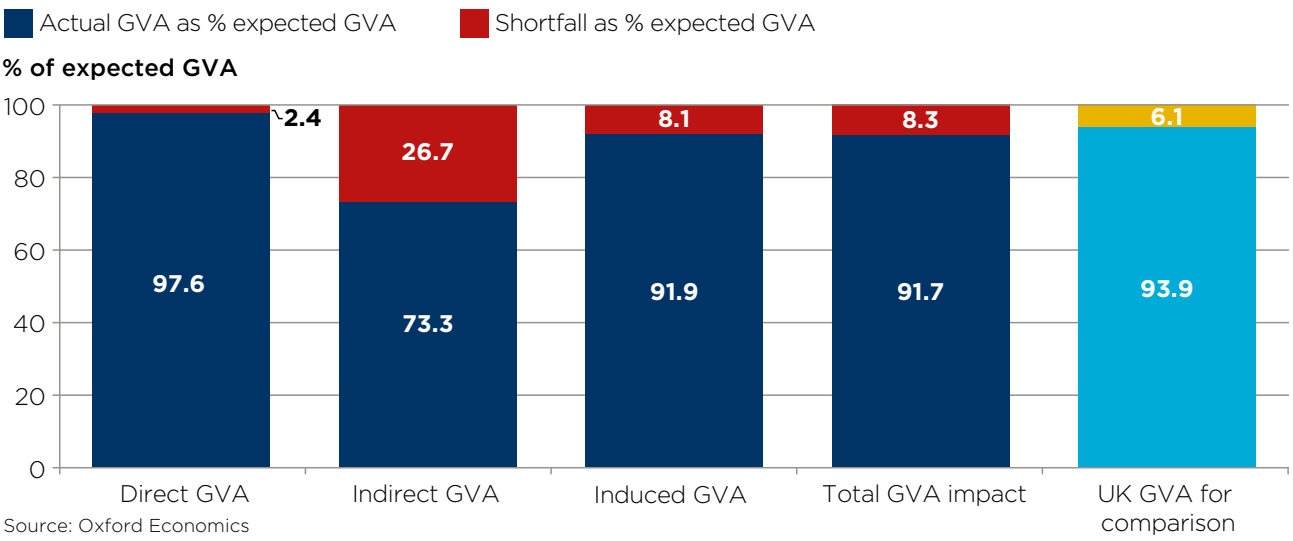
The starting point for this analysis was an assessment of how the schools' impacts in 2021 compared with the values that would have occurred, had the pre-2020 "trend" growth rates continued in 2020 and 2021. **We find that the total GVA impact fell short of that "expected" value by 8.3%, with the total employment impact disappointing expectations by 6.2%.** These shortfalls were mainly driven by trends in fee income, which fell short of expectations by 6.8%. Here, while the total number of pupils at HMC schools actually surpassed expectations based on pre-2020 trends, average fees per pupil were 8.4% lower than they would have been, on the basis of pre-2020 trends continuing.

Our analysis suggests that the vast majority of the reduction in GVA and jobs impacts, relative to pre-2020 growth trends, can be attributed to Covid-19. The key driver of the shortfall in arithmetic terms, i.e., the average fee per pupil, is directly related to fee discounts offered to parents in 2021 (as they had been in 2020), specifically in response to the impact of Covid-19-related restrictions on both the schools' offering, and the financial circumstances of some parents.

By contrast, the impact of Brexit in the years concerned appears to be limited (although this does not mean that there will not be a more significant impact over the longer term). Trends in pupil numbers by nationality point to any "Brexit effect" being very small, and unlikely to account for more than 0.8% of the 6.8% shortfall in fee income identified.

The other main finding of interest is that the direct GVA and employment impacts fell less sharply than the indirect impacts, which were dented quite severely (see Fig. 25 in the case of GVA). That is because fee income is mainly used to cover two types of cost: employment costs, which form the major part of direct GVA and which held up relatively well, and purchases of goods and services from third parties, which support the indirect impacts, and which were cut significantly.

Fig. 25: GVA shortfalls in 2021, by channel of impact



Source: Oxford Economics

4.2 QUANTIFYING GVA SHORTFALLS IN ACTIVITY IN 2021

To assess the extent of any shortfalls in activity in 2021, Oxford Economics used Baines Cutler data on school income, spending, and employment for 2015 and 2019, to estimate the GVA and jobs impacts of HMC schools in those years. The GVA estimates were rebased to 2021 prices, to control for inflation.

The annual trend growth rates in each of the schools' GVA and jobs impacts, for the period prior to 2020, were derived from there. The 2019 impacts were then grown forward to 2021, on the basis of these prior trend growth rates continuing, with the results taken to be the "expected" impacts for that year. The actual 2021 GVA and employment out-turns were then compared with the expectations, to arrive at the estimated shortfalls (if any) caused by "economic shocks".

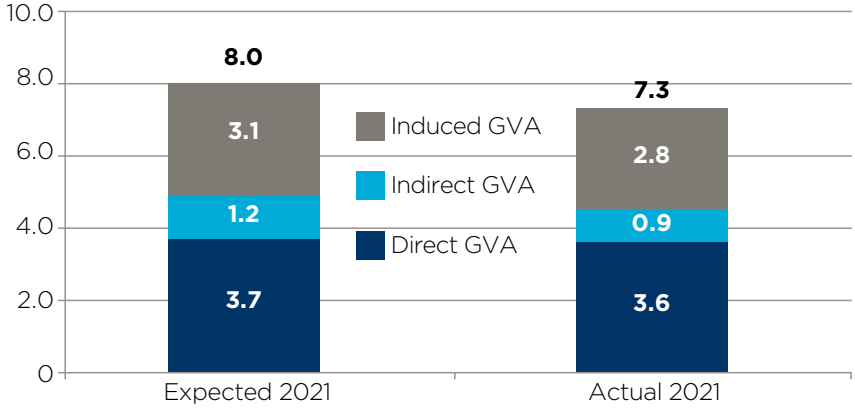
4.2.1 Shortfalls in the schools' GVA impacts in 2021

As shown in Fig. 25 above, the direct GVA impact fell short of expected levels in 2021 by 2.4%, with the total GVA impact disappointing by 8.3%. So direct GVA was adversely affected by the economic squeeze, but by less than GVA across the economy as a whole. However, indirect GVA fell short of expectations by a significant 26.7%, reflecting a shortfall in the schools' purchases from third party businesses of a similar magnitude. The shortfall in the induced impact, reflecting the salary-funded spending of school staff, and (less importantly) that of supply chain workers, was 8.1%.

Fig. 26 shows the actual and expected GVA impacts in 2021. The total GVA impact of £7.3 billion compares with an expected £8.0 billion, while the direct impact of £3.6 billion fell short of the expected £3.7 billion. The total GVA shortfall was therefore £0.7 billion in cash terms. The equivalent shortfall for all independent schools was £1.8 billion. Fig. 27 shows the GVA estimates for 2015 and 2019, which lie behind the expected 2021 levels: £6.8 billion and £7.6 billion (at 2021 prices) in the case of the total impact, and £3.2 billion and £3.5 billion in the case of the direct impact.

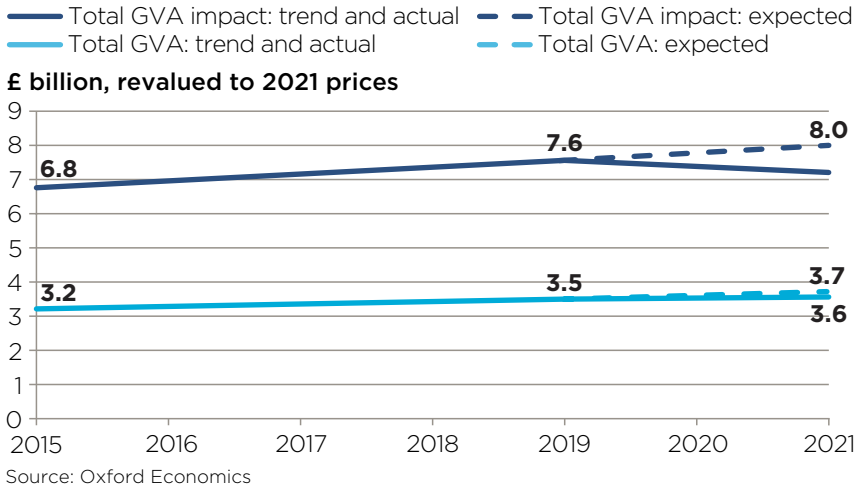
Fig. 26: Expected and actual GVA impacts in 2021, by channel

£ billion, revalued to 2021 prices



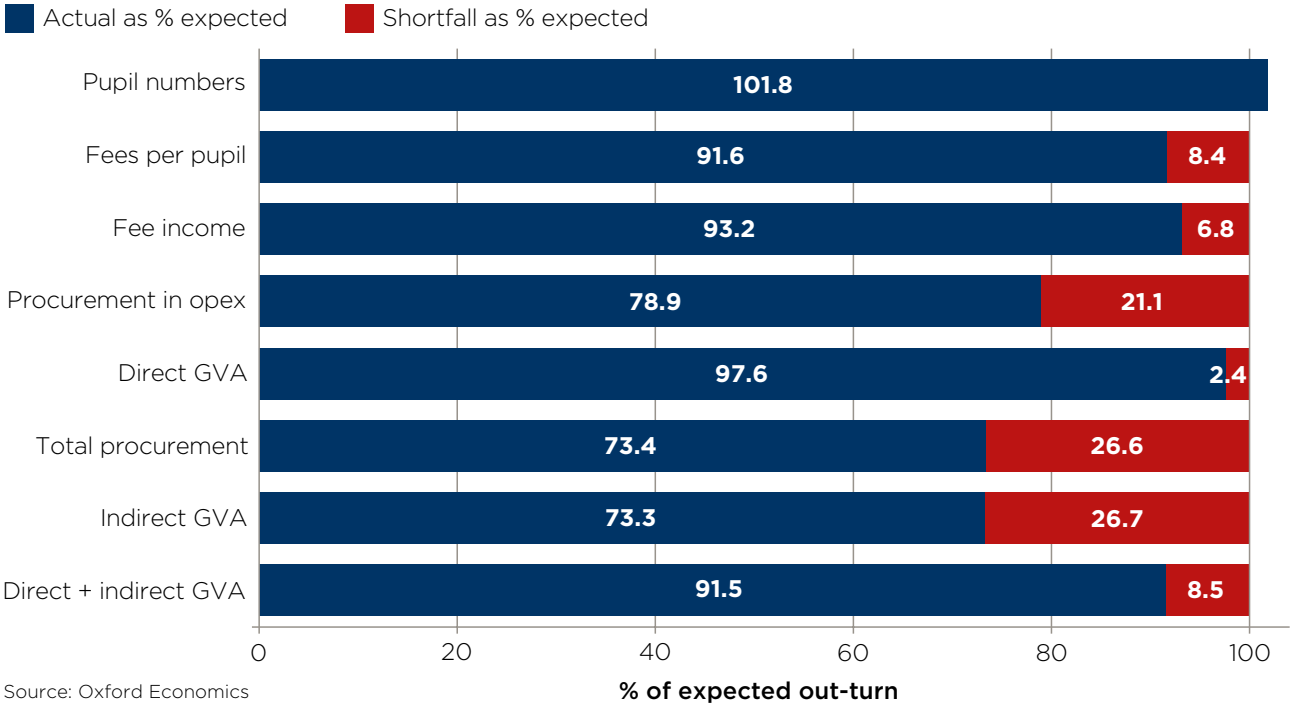
Source: Oxford Economics

Fig. 27: Trend in GVA impacts, 2015-2019, and expected and actual GVA impacts in 2021



Source: Oxford Economics

Fig. 28: Direct and indirect GVA shortfall by contributing factor



Source: Oxford Economics

Notes: Fee income = pupil numbers x fees per pupil. Direct GVA = fee income - procurement in opex.
Total procurement = procurement in opex + capital procurement.

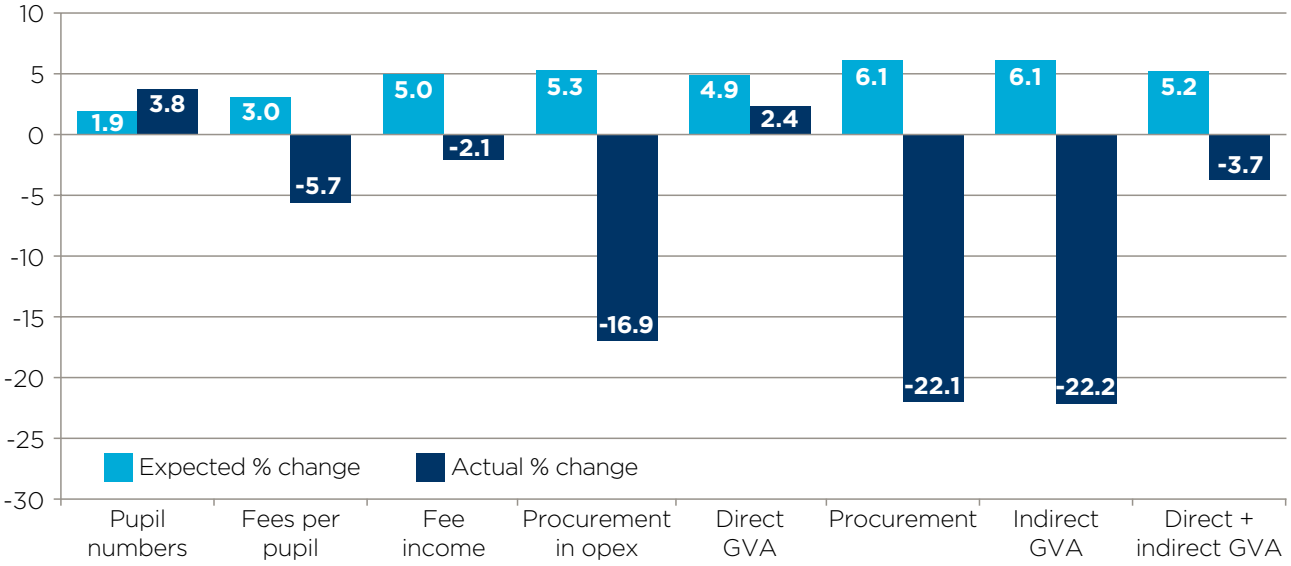
Further analysis of the data reveals that fee income fell short of expectations by 6.8%, driven by trends in average fees per pupil, rather than any shortfall in total pupil numbers (see Fig. 28). In response to this lower fee income, plus the direct effect of Covid-19 restrictions on school activities, procurement from third party businesses counted in operating expenditure ("opex", as opposed to capital expenditure) was cut by 21.1%. So, as direct GVA is the difference between fee income and this type of procurement, it did not fall short of expectations to the same extent as income.

Instead, the supply chain was squeezed significantly, with the effect compounded by the fact that capital procurement (mainly construction work) was cut even more sharply than procurement in opex. Taking that into account, direct and indirect GVA, taken together, fell short by 8.5%.

Fig. 29 shows the expected and actual changes between 2019 and 2021 underlying these estimated shortfalls. In total, pupil numbers grew by 3.8% over those two years, but fees per pupil fell by a cumulative 5.7%, after adjusting for inflation. The direct GVA of HMC schools increased by 2.4%, but direct and indirect GVA combined fell by a cumulative 3.7%, compared with the expected increase of 5.2% had pre-2020 growth trends continued.

Fig. 29: Change in inflation-adjusted GVA impacts, and contributing factors, 2019-2021

Total % change, adjusted for inflation



Source: Oxford Economics

4.3 POSSIBLE DRIVERS OF THE GVA SHORTFALLS

In this section we seek to apportion the GVA shortfalls to various potential "drivers", which could in principle include Covid and Brexit.

4.3.1 Covid-19

Our main conclusion is that Covid-19 appears to be the dominant factor behind the squeeze on HMC schools' GVA impacts in 2021, relative to pre-2020 trends. The above analysis shows that the decline in fee income is mainly driven by average fees per pupil, rather than pupil numbers. This was largely driven by fee discounts given by the schools in that year, because of the impact of Covid restrictions on the schools' offering, and on the financial circumstances of some parents.[18]

4.3.2 Brexit in the short term

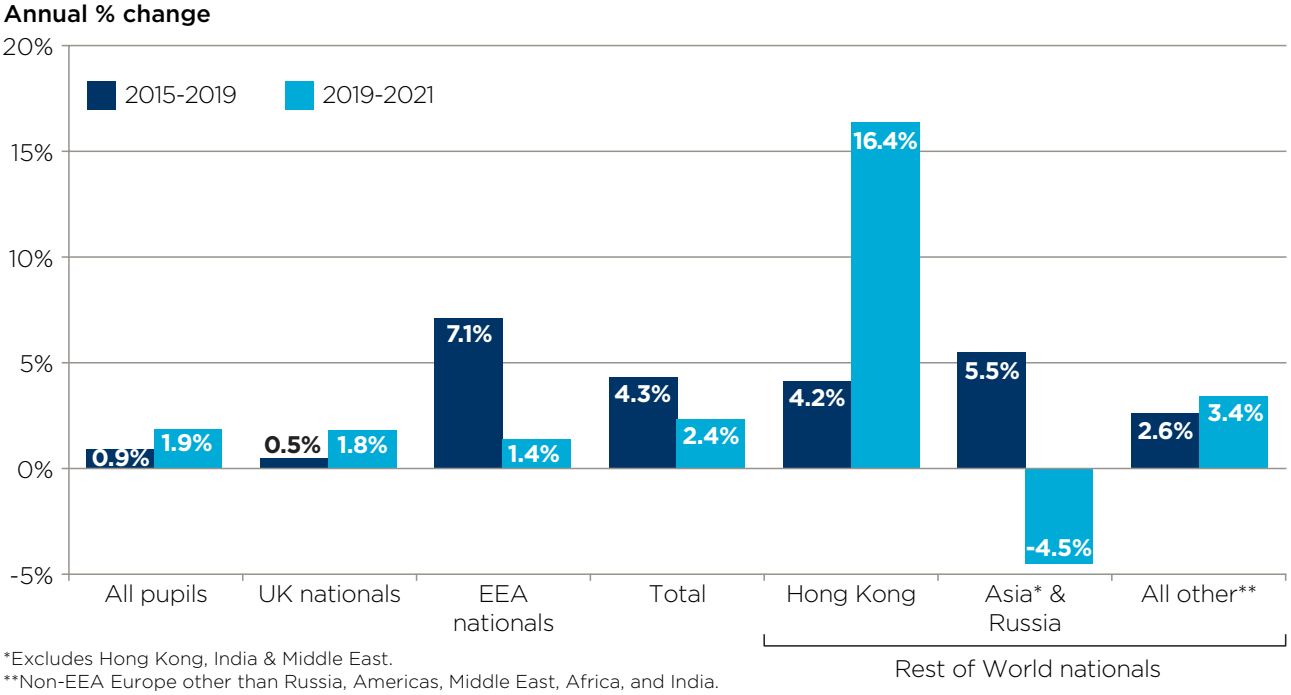
In principle, Brexit could have had an impact, had the demand for school places from EEA nationals dropped specifically in response to that event—due to changed visa arrangements for example. That would directly reduce pupil numbers, and probably, also cut average fees per pupil, as these pupils are more likely to be boarders than other (mainly UK national) pupils. (Boarding fees are generally higher than day fees.)

However, **data on pupil numbers by nationality suggest that any such "Brexit effect" will have been modest, relative the overall, mainly Covid-driven shortfall**. As Fig. 30 shows, EEA nationals grew by an average of 1.4% per annum between 2019 and 2021, compared with an increase of 2.4% for other non-British pupils. Had the growth in EEA nationals matched that of all other non-British pupils—a plausible possibility in the absence of Brexit—then fee income would have fallen short of expectations by 6.6%, rather than the 6.8% found.

Alternative, more sophisticated estimates can also be made, consistent with a somewhat clearer "Brexit effect".

[18] Baines Cutler Solutions Ltd, National Independent Schools' Benchmarking Survey 2022, The Financial Impact of Covid.

Fig. 30 Trends in pupil numbers by nationality grouping, 2015-19 and 2019-21



*Excludes Hong Kong, India & Middle East.
**Non-EEA Europe other than Russia, Americas, Middle East, Africa, and India.

Source: HMC schools via ISC; Oxford Economics

First, and as the chart shows, **there is a striking variation within the "rest of the world" group**. There was a drop in pupils from the Asia Pacific region, excluding India and Hong Kong, and also from Russia, between 2019 and 2021, almost certainly driven by travel-related Covid-19 restrictions. On the other hand, there was a very sharp increase in pupils from Hong Kong. If both of these groups are excluded from the analysis, on the grounds of being "outliers", then "rest of the world" pupils increased by 3.4% per annum between 2019 and 2021. Had the growth in EEA nationals matched that benchmark growth rate, then the shortfall in fee income would have been around 6.5%.

Second, **if expectations are based on trend growth between 2015 and 2019, then EEA pupil numbers disappointed by much more than other non-British pupil numbers**. More precisely, the shortfall in EEA pupil numbers, calculated on the same basis as the shortfalls shown in Section 4.2, was 10.9%, versus a 5.5% shortfall for all other non-British nationals. Had EEA pupil numbers fallen short of these expectations by 5.5%, rather than 10.9%, then total fee income would have disappointed by 6.4%. And had EEA numbers exceeded expectations by 1.6%, in line with the out-turn for non-British nationals excluding "outliers", then the fee income shortfall would have been 6.0%.

But across the range of estimates, Brexit can only be blamed for limited share of the 6.8% shortfall in fee income in 2021—somewhere between 0.2 and 0.8 percentage points—and, so, for a correspondingly low share of the GVA and jobs shortfalls, with Covid accounting for the vast majority.

4.3.3 Brexit in the long term

This does not mean that Brexit will not have a more significant effect on HMC schools, and the independent schools sector, over long term. It is possible that the new visa arrangements will prevent EEA pupil numbers from bouncing back, as the Covid-19 threat recedes, in the way that might otherwise have

happened. And HMC schools' fortunes will also be tied to those wider UK economy.

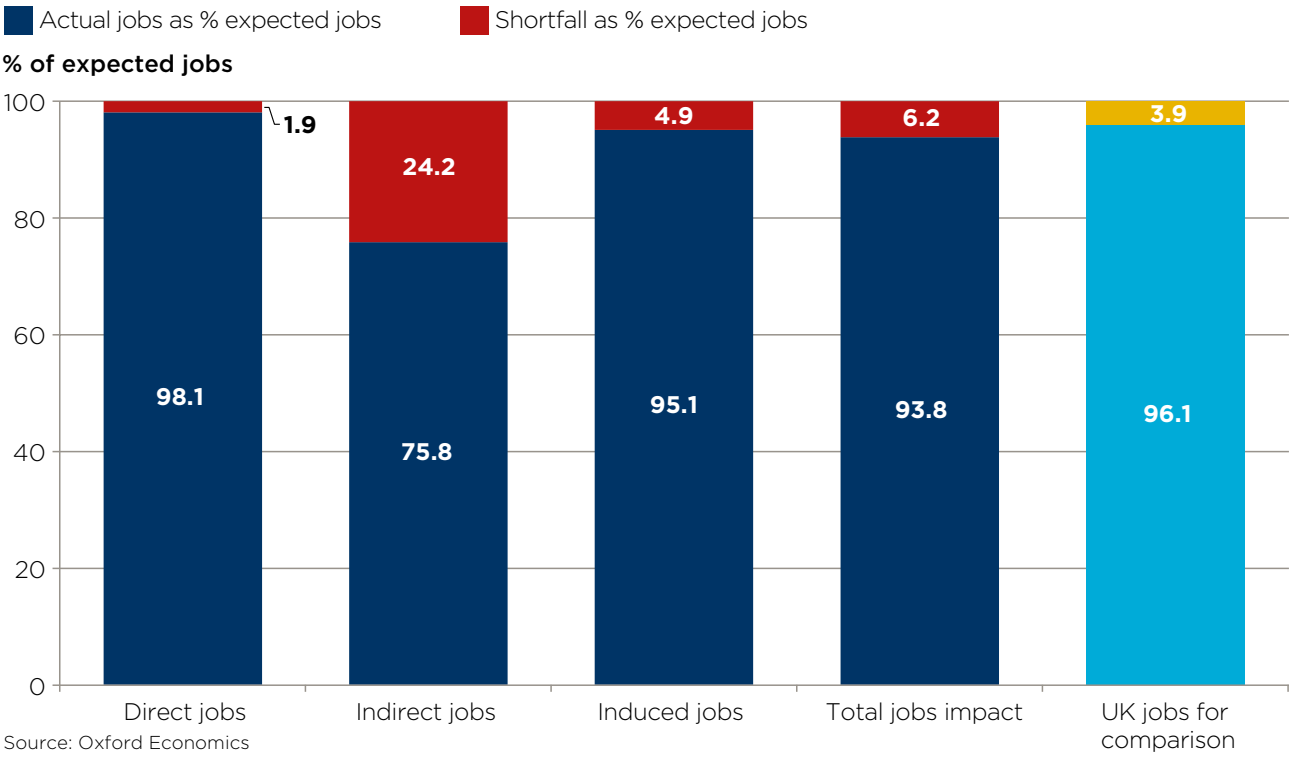
In relation to the latter, it is difficult to identify any short-term "Brexit effect" in the UK-wide GVA figures, looking at 2020 and 2021 compared with 2019.[19] But total exports and imports were both lower, as a share of total production and income, in 2021 than in 2019, and if that remained the case in the longer term, then national productivity and real incomes could grow at a slower rate than otherwise, reflecting a loss of "gains from trade". That could curb the demand for independent school places by UK resident parents, relative to a hypothetical "no Brexit" scenario, with losses each year accumulating into more significant losses over time.

4.4 SHORTFALLS IN THE SCHOOLS' EMPLOYMENT IMPACTS IN 2021

Turning to employment, the broad picture is similar to that for GVA. In this case, the shortfall in the direct jobs impact was 1.9%, which was lower than the shortfall across the UK as a whole (Fig. 31).

But the total jobs impact disappointed by 6.2%, influenced by the 24.2% shortfall in indirect jobs. Further details of these results can be found in the results tables in Appendix 1.

Fig. 31: Trend in jobs impacts, 2015-2019, and expected and actual jobs impacts in 2021



Source: Oxford Economics

[19] The main identifiable impact is a sharp decline in imports from the EU, compared with a very modest decline in imports from the rest of the world, between 2019 and 2021. But that does not directly affect UK GVA, which relates to domestic production. Exports to the EU also fell between the two years, but exports to the rest of the world fell by almost the same percentage.


Quickfit
Equipment


PERIODIC TABLE OF ELEMENTS
Clean Air

5. ENVIRONMENTAL IMPACTS

The economic activity associated with HMC schools generates a complex environmental impact through many channels and across the entire value chain. At each stage of the journey—from, for instance, the extraction of gas in the North Sea, to the generation of electricity using that gas, to the transmission and use of electricity in schools—energy is used, and greenhouse gases (GHGs) escape into the atmosphere.

These GHGs include carbon dioxide, methane, nitrous oxide, and fluorinated gases. The level of GHG emissions is an important environmental indicator, and is explicitly targeted in international treaties, most notably the Kyoto Protocol to the UN Framework Convention on Climate Change. Many governments around the world have incorporated the goal of limiting GHG emissions into their national policy priorities. In the UK specifically, there is now a target, set in law, to reduce them to 78% of 1990 levels by 2035. This is to be achieved mainly by cutting carbon emissions, with any shortfall on that score offset by mitigating action, such as tree planting which can absorb carbon from the atmosphere. Gas emissions in turn are largely determined by energy use, and the source of that energy, but other factors—such as the keeping of animals—can also contribute.

The UK's environmental objectives require all parts of the economy, including private and public sectors, charities, and households, to act, if this target is to be achieved. As the owners of large buildings, housing a wide-range of energy-using activities (such as catering and laundry services), often in surrounding grounds, independent schools should be able to make a useful contribution to the national emissions target, despite the relatively small size of the sector when compared with the whole UK economy.

This chapter explores the scope and scale of these emissions, and the energy use contributing to them. The analysis considers not only the environmental footprint of the schools themselves, but also that of the supply chains they draw on, both in the UK and overseas. Just as each pound's worth of GVA has an associated employment and tax impact, depending on the nature of the businesses concerned, it also has an associated environmental impact, in terms of GHG emissions, allowing Oxford Economics to model this effect.

However, rather than direct, indirect, and induced impacts, the GHG impacts are split into "scopes", as defined in the Kyoto Protocol:

- **Scope 1** impacts refer to the emissions generated at the schools' sites;
- **Scope 2** impacts reflect the emissions caused by the generation of electricity and gas supplied to the schools; and
- **Scope 3** impacts capture the emissions of the schools' wider global supply chain, both in the UK and across the rest of the world, and including supplies of capital assets.

An alignment between economic impact channels (direct and indirect) and environmental impact channels (Scopes 1, 2, and 3) is illustrated in Fig. 32.

Three points about the analysis should be emphasised. First, the GHG "footprint" measured here will not by any means capture the full extent of the schools' impact on the environment. In particular, arguably the most important action that schools can take in this field is to teach their pupils about the potential environmental impact of their future actions. As the Dasgupta Review of biodiversity points out, UK society should aim to "transform our institutions and systems—in particular our finance and education systems—to enable these changes and sustain them for future generations".[20]

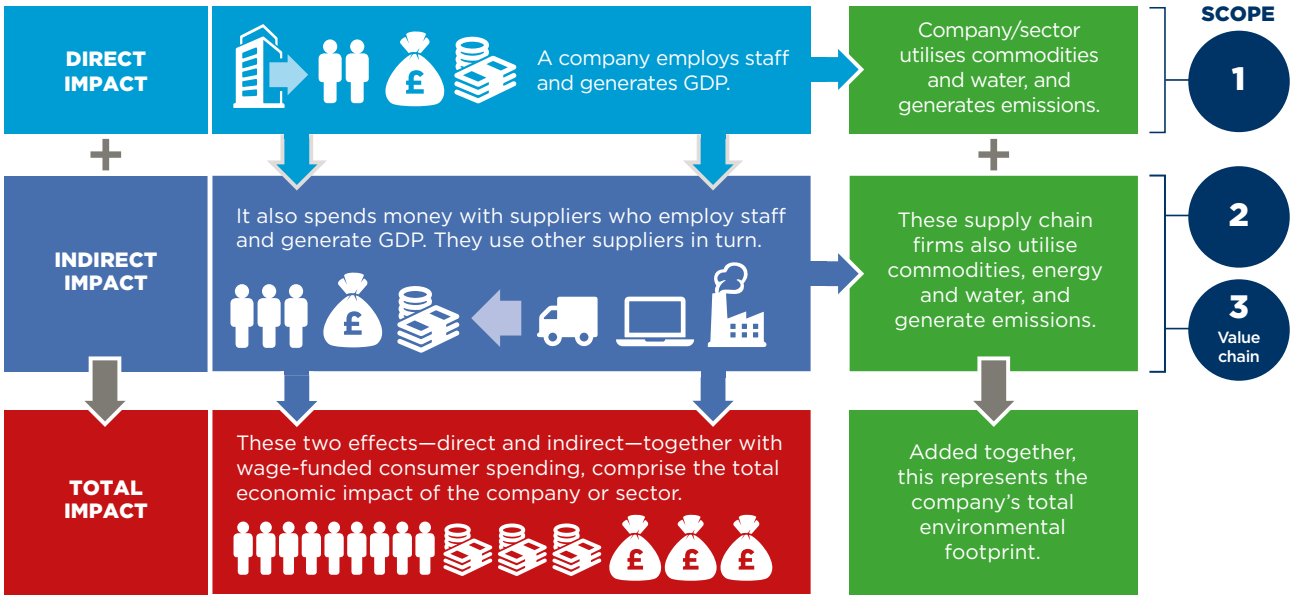
[20] HM Treasury, The Economics of Biodiversity: The Dasgupta Review, Headline Messages, February 2021.

Second, the estimates are modelled by Oxford Economics, rather than using data provided specifically by HMC schools. The reduction shown in emissions over time is therefore based on an assumption that the schools' impacts have changed in line with those of the wider education sector. However, we believe this to be a reasonable assumption and, as shown further below, HMC schools have indeed taken specific actions to curb the environmental effects directly within their control.

Third, in principle Scope 3 impacts should also include the effect of customers using the goods and services produced by the sector concerned, plus all related travel activity. In the schools' case, this will be essentially limited to the transport of pupils to and from the schools, which we have not been able to estimate due to the lack of comprehensive data. These so-called "downstream" impacts are also, therefore, excluded in the case of the benchmark comparator sectors.

For the purposes of measurement, emissions of the various greenhouse gases are quantified in terms of "CO_2-equivalency", based on their "global-warming potential".

Fig. 32: Illustration of the relationship between economic and environmental impacts

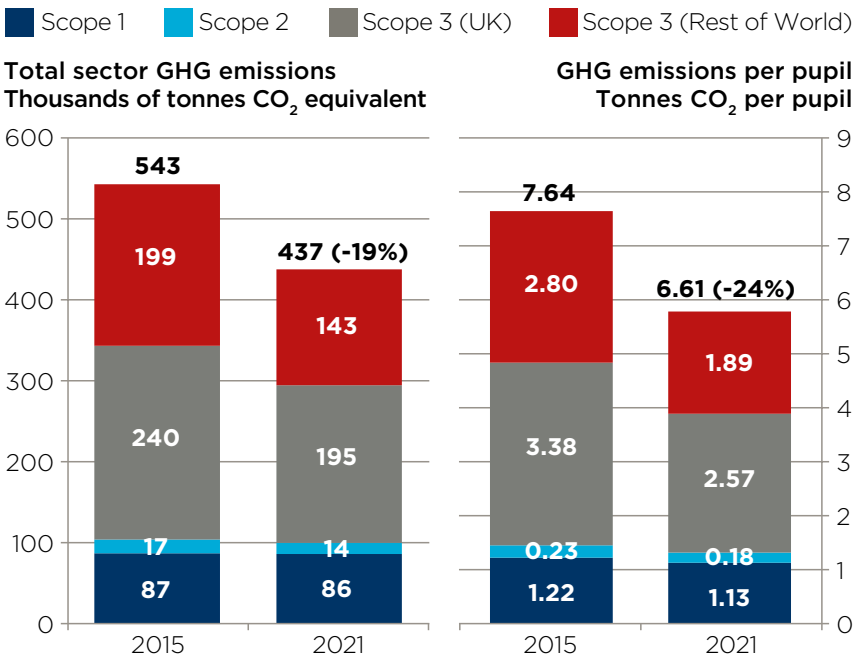


5.1 THE GREENHOUSE GAS EMISSIONS FOOTPRINT: KEY FINDINGS

Fig. 33 shows the estimated total emissions of GHGs associated with HMC schools in 2021, and in 2015 for comparison. In 2021, HMC schools' total emissions amounted to 437,000 tonnes of carbon dioxide equivalent (CO_2e). Within that, the impact within the UK, including the emissions of the schools and their supply chain, was 294,000 tonnes, or 0.07% of total UK emissions. That compares with the school and supply chain share of total UK GVA of 0.21%, suggesting that **HMC schools are "greener" than the average UK sector, in terms of UK carbon emissions per unit of GVA**.

As the chart also shows, **HMC schools' emissions at the global level fell by 19% between 2015 and 2021, or by 24% on a per-pupil basis**. Also, most emissions occur in the value chain—i.e., Scope 3—with the direct emissions at the schools themselves (Scope 1) comparatively modest. Within the Scope 3 impacts, manufacturing (such as producing school furniture), utilities and mining (such as generating the electricity used by the furniture producers), and transport and distribution (to transport the furniture from the factory to the school, for example) account for 30%, 26%, and 22% of these emissions, respectively.

Fig. 33: HMC schools' estimated GHG emissions in 2015 and 2021



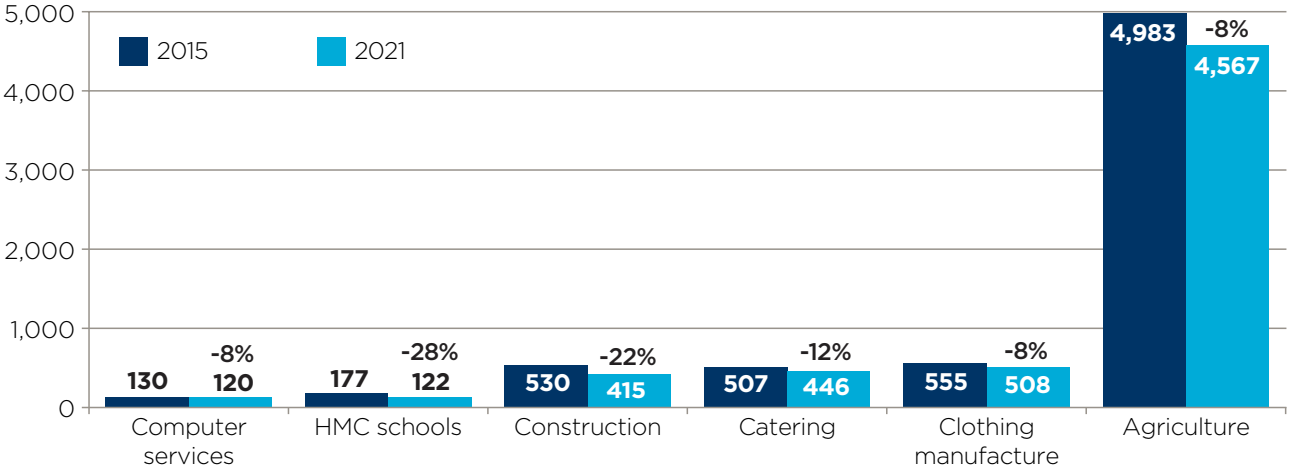
Source: Oxford Economics

To put the schools' emissions in context, Fig. 34 shows emissions per £ million of GVA (that is, the "emissions intensity"), for the schools and five comparator sectors—namely agriculture, construction, a typical manufacturing sector (clothing manufacture), a typical consumer service sector (catering), and a typical business service sector (computer-related services). It can be seen that the schools' emissions intensity is on the low side in this context, and fell by 28% between 2015 and 2021. **This means that HMC schools became "greener" relative to each unit of economic activity supported, between those two years.**

Furthermore, although there has been a general trend for emissions intensity to fall across most parts of the UK economy, the decline for HMC schools has been faster than for each of the comparator sectors.

Fig. 34: HMC schools' GHG emissions intensity in 2015 and 2021, in context

Tonnes CO_2e per £ million of GVA at 2021 prices



Source: Oxford Economics

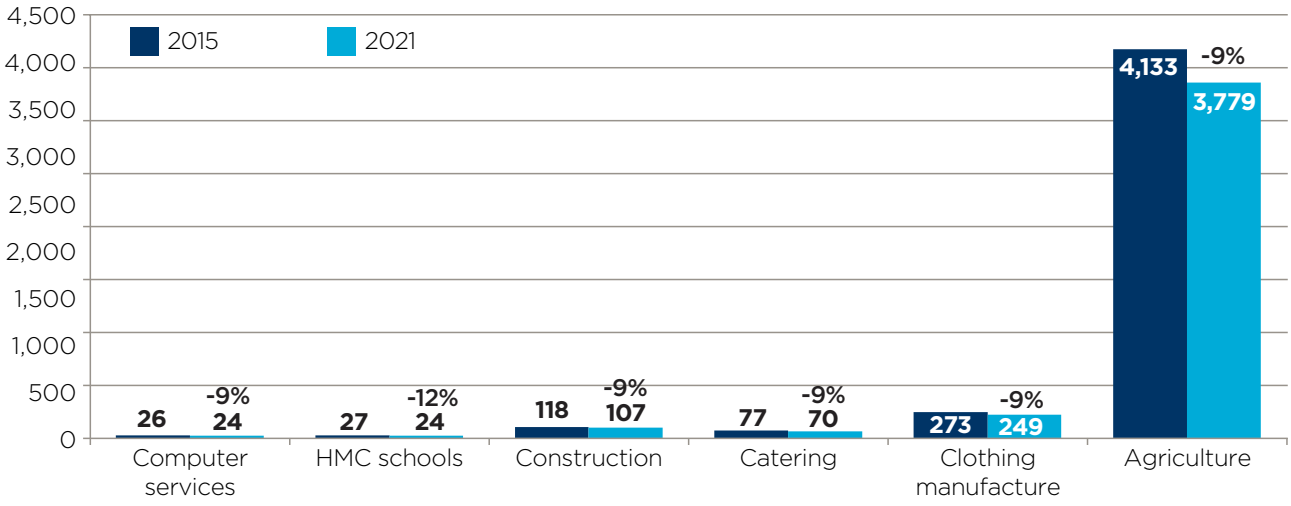
5.2 HMC SCHOOLS' OWN SCOPE 1 IMPACT

Turning to the individual scopes, **Fig. 35 shows how the Scope 1 impact is low in the case of the schools, on a per-pound-of-GVA basis, compared with the benchmark sectors**. The impact is also expected to have fallen between 2015 and 2021, as it did across most parts of the UK economy.

HMC schools recognise their social responsibility to enhance the environmental sustainability of their activities, and members of the HMC school community are striving to act as socially responsible organisations. Just two good examples of that are provided by the activities of the Royal Hospital School, and Berkhamsted School, outlined in the case studies below.

Fig. 35: HMC schools' own Scope 1 GHG emissions intensity in 2015 and 2021, in context

Tonnes CO_2e per £ million of GVA at 2021 prices



Source: Oxford Economics

SCHOOL FOCUS: THE ROYAL HOSPITAL SCHOOL

The Royal Hospital School (RHS), an independent school located in Ipswich, aims to "cultivate a global outlook and environmental responsibility".[21] The school, driven by its pupil-led Eco-Committee, demonstrates its commitment to this aim through a range of environmental initiatives to help tackle climate change.

In 2019, RHS received a Gold Carbon Charter from Suffolk Council in recognition of the school having reduced its carbon footprint by 35% since 2010.[22] The school cut its resource use across several categories, including reducing water use by 54%, heating oil usage by 41%, and electricity by 26%. In addition, RHS has made structural investments to improve its operational efficiency. These investments include energy use monitoring systems, insulation, secondary glazing, LED lighting, pump inverters, and water treatment systems.[23]

Pupils at the school have also been inspiring sustainable practices by, for example, growing a school community garden.[24] The Eco-Committee, made up of pupil representatives from across the school, ran a campaign on single-use plastic bottles used by RHS, leading to the introduction of re-usable bottles for pupils.[25] Recently, the committee encouraged pupils and staff to make an environmental commitment on Earth Day 2022 (22 April), and volunteered to clean up plastic from a local woodland.[26,27]

Climate change awareness is also included in the school's curriculum. For example, GCSE geography students study topics such as deforestation and climate change, and took part in a COP 26 debate following the global conference. Students across the school also joined a virtual meeting with a Global Sustainability consultant to learn more about COP 26.[28]

Looking ahead, the school and Eco-Committee are determined to continue to implement change, following the disruption of the Covid-19 pandemic.[29]

[21] Royal Hospital School. Caring For Our Environment.
[22] Royal Hospital School. Caring For Our Environment.
[23] Royal Hospital School. 2019. Gold Carbon Charter.
[24] Royal Hospital School. 2019. Community Garden.
[25] Royal Hospital School. 2019. Gold Carbon Charter.
[26] Royal Hospital School. 2022. Earth Day Pledges.
[27] Royal Hospital School. 2022. Plastic Pick Up.
[28] Royal Hospital School. 2021. The Big COP 26 Debate.
[29] Royal Hospital School. Caring For Our Environment.

SCHOOL FOCUS: BERKHAMSTED SCHOOL

Berkhamsted School, located in Hertfordshire, is committed to incorporating sustainability into all of its teaching and operations. This is reflected in these activities amongst others:

- The establishment of a Sustainability Committee to provide leadership, co-ordination and guidance on how to integrate sustainability principles and practices into all of the School's activities and operations.
- The provision from 2022 onwards of an Annual Sustainability Report, highlighting the School's Environmental, Social and Governance (ESG) strategy, goals, and activities.
- Participation in the Government's Streamlined Energy and Carbon Reporting (SECR) framework, on an annual basis—calculating the School's Scope 1 and 2 emissions, and comparing them on an absolute and intensity basis.

- Ensuring that the School's performance targets align with UN Sustainable Development Goals (SDGs), in those fields where the school has, or could have, the greatest impact.
- Putting initiatives and strategies in place, over the next few years, to reduce the School's overall carbon emissions. As well as continuing to reduce energy consumption, and transport-related emissions, the School will also seek to gain a greater understanding of the Scope 3 emissions generated in its supply chain.
- The provision of a home-to-school coach service transporting up to 580 pupils every day, with each coach journey on average saving 31 parent car trips and 3.47 g/km of CO2. The School has also negotiated discounts with train and bus providers, and is developing software to facilitate car-sharing by pupils and their parents, and by staff.
- The recent addition of three fully electric zero emission vans to the School's vehicle fleet, and introduction of an electric bike scheme for staff travelling between School sites. Looking ahead, there are plans to develop electric vehicle charging, to be accessible to staff, pupils and visitors, by 2030.
- The adoption of a zero waste-to-landfill policy, supported by a partnership with Grundon Waste Management Ltd. This ensures that most waste is recycled, and that the remainder is incinerated in a way that generates electricity and provides heat to local homes.
- A partnership with the Wildlife Trust in 2022, to research the best ways to promote and increase biodiversity and flora on the School grounds.

More broadly, several HMC schools have set up eco-initiatives to inform and inspire positive change, from small-scale pupil-led eco-committees which aspire to enact change within the local community, to longer-term environmental commitments. Such commitments include the "Let's Go Zero" carbon charter, a national campaign to help participating schools become net zero by 2030.[30] To date, 21 HMC schools have signed up to the charter. Furthermore, the Girls' Day School Trust (GDST), a group of UK independent girls' schools including HMC members, has invested in large-scale redevelopment of its school sites and systems. By Earth Day 2022 (22 April), GDST became a recognised carbon-neutral organisation.[31]

5.3 THE SCOPE 2 IMPACT OF HMC'S ENERGY USE

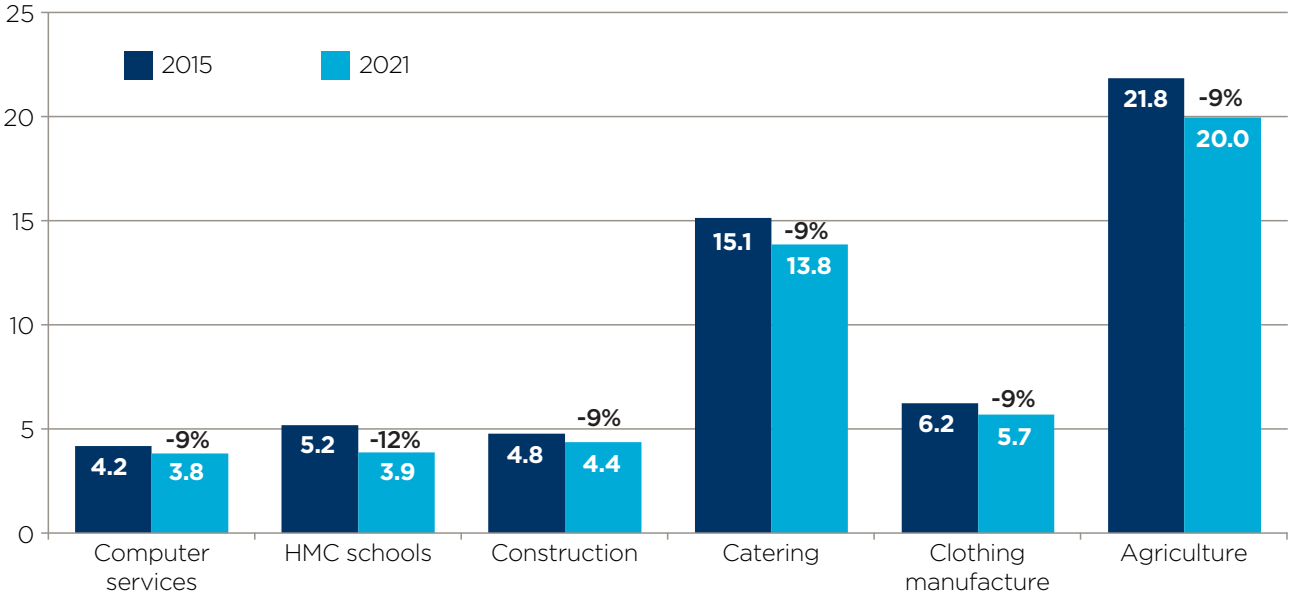
For HMC schools, and for the benchmark sectors—none of which are especially energy-intensive producers—the Scope 2 impacts are limited. They have typically fallen across-the-board in the UK in recent years, mainly reflecting shifts in the pattern of UK energy generation, away from coal and other fossil fuels, and towards renewable energy (see Fig. 36).

For the schools, total energy use—measured in the physical unit of joules rather than monetary value—is estimated to have increased by 4% between 2015 and 2021, although this represents a 4% decline on a per-pupil basis. But, as Fig. 37 shows, there was a dramatic shift away from energy sources based on coal and petroleum—which generate significant amounts of GHGs—and a clear step-up in the use of energy derived from renewable sources, such as solar power, wind power, and hydro-electricity.

Fig. 38 puts these values onto a per-pound-of-GVA basis, and compares across the benchmark sectors. HMC schools use the least energy of all on this basis, though it can be seen how the ratios have trended downwards across the economy since 2015, and most markedly in agriculture and clothing manufacture where energy-intensity was the highest to start with.

Fig. 36: HMC schools' Scope 2 GHG emissions in 2015 and 2021, in context

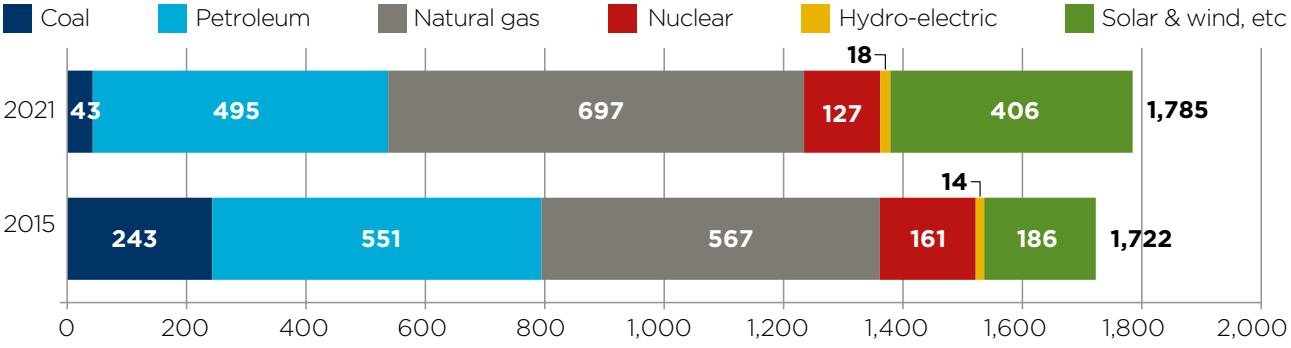
Tonnes CO_2e per £ million of GVA at 2021 prices



Source: Oxford Economics

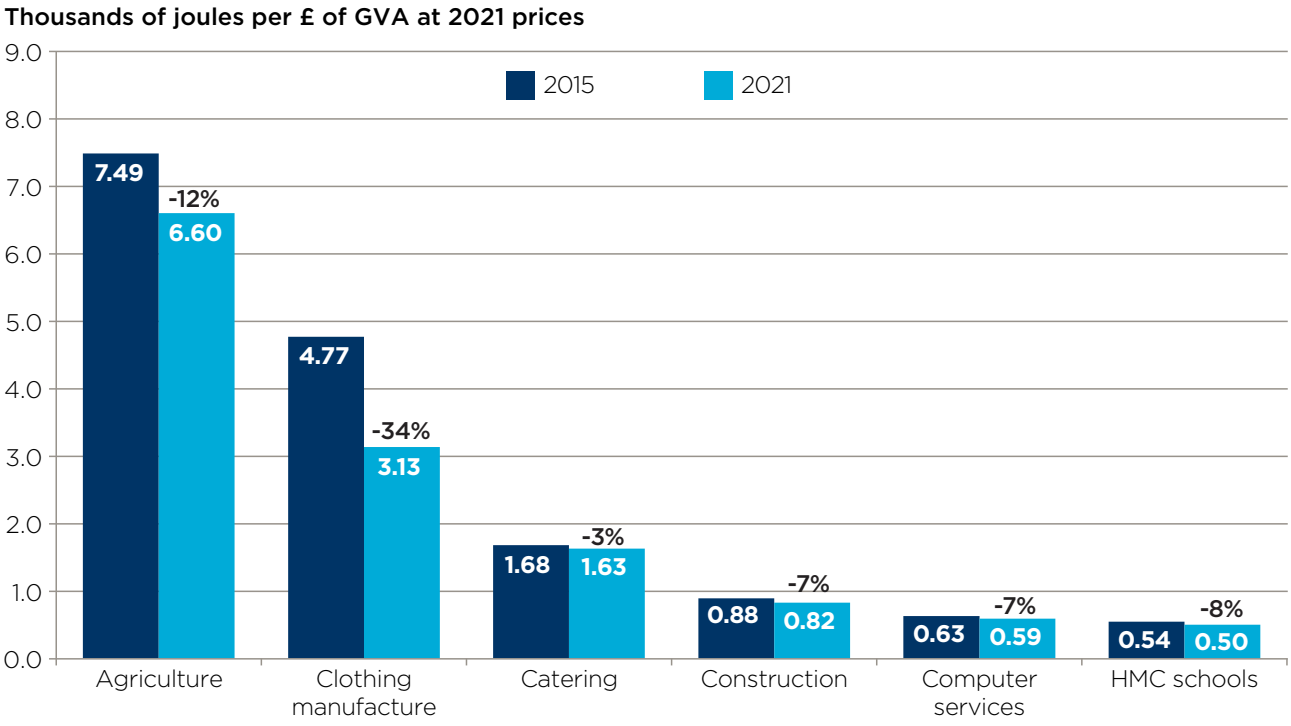
[30] Let's Go Zero 2030. Schools working together to be zero carbon.
[31] Independent Education Today. 2022. 'The Girls' Day School Trust to celebrate Earth Day 2022 as a CarbonNeutral® organisation'.

Fig. 37: HMC schools' energy use in 2015 and 2021, by source



Source: Oxford Economics

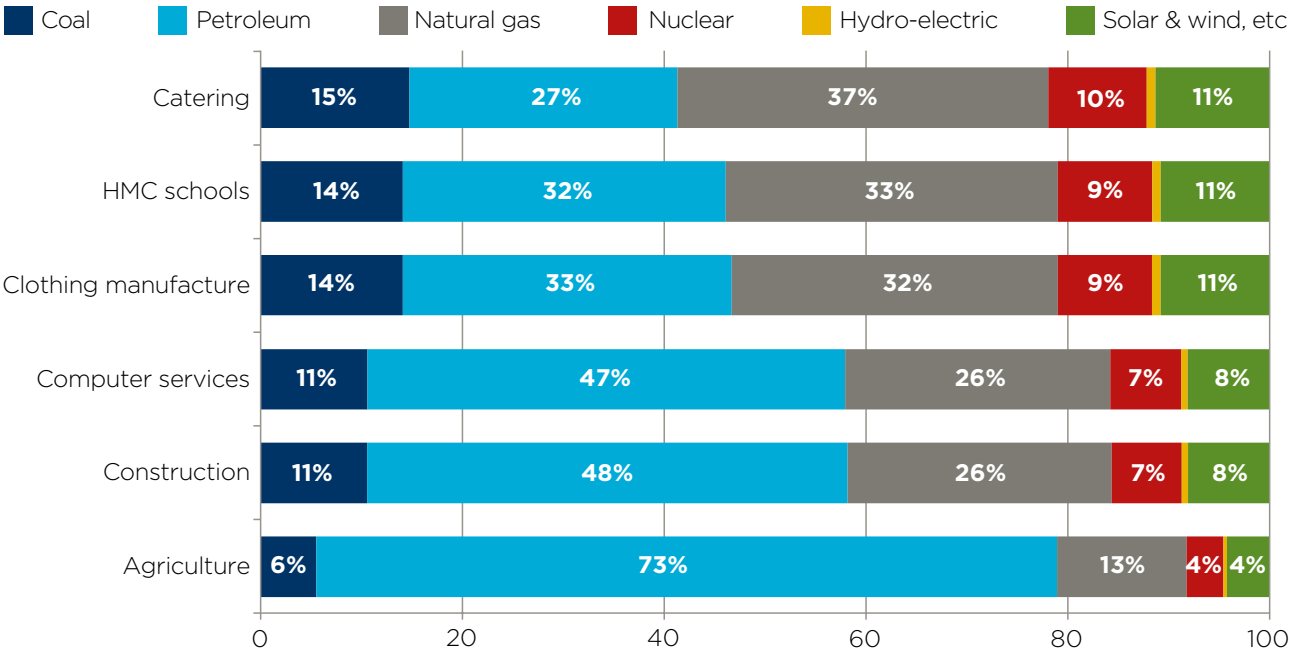
Fig. 38: Total energy use by select UK sectors in 2015 and 2021



Source: Oxford Economics

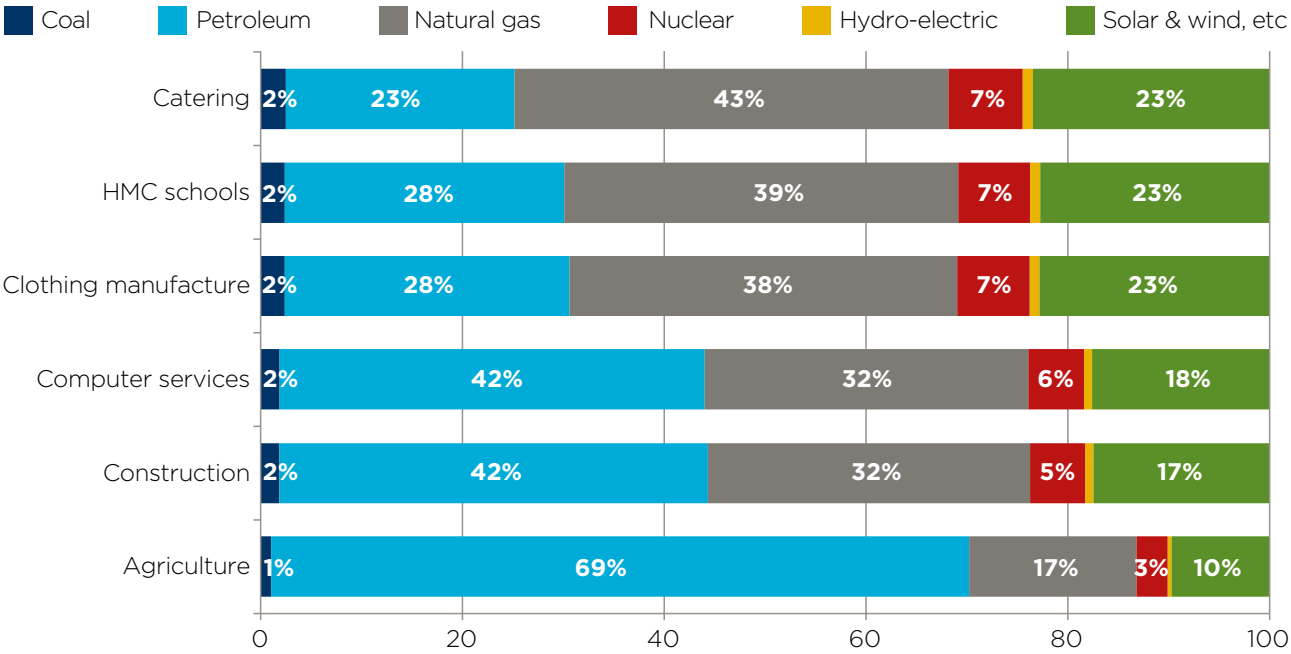
Fig. 39 and Fig. 40 show how, in addition to the reduction in total energy use per unit of GVA, **the energy mix became more environmentally-friendly for each of the sectors between 2015 and 2021**. HMC schools compare well on that score, with a comparatively low 30% of energy used derived from coal and petroleum in 2021, and a comparatively high 24% from renewable sources (including hydro-electricity). The remainder is accounted for by natural gas, which is another fossil fuel but less environmentally-unfriendly than coal and petroleum, and nuclear power, which has a low impact in terms of GHG emissions, but has other downsides in terms of resource use and contamination risk.

Fig. 39: The energy use mix of select sectors in 2015



Source: Oxford Economics

Fig. 40: The energy use mix of select UK sectors in 2021



Source: Oxford Economics

5.4 THE GLOBAL SCOPE 3 IMPACT OF HMC'S NON-ENERGY PURCHASES

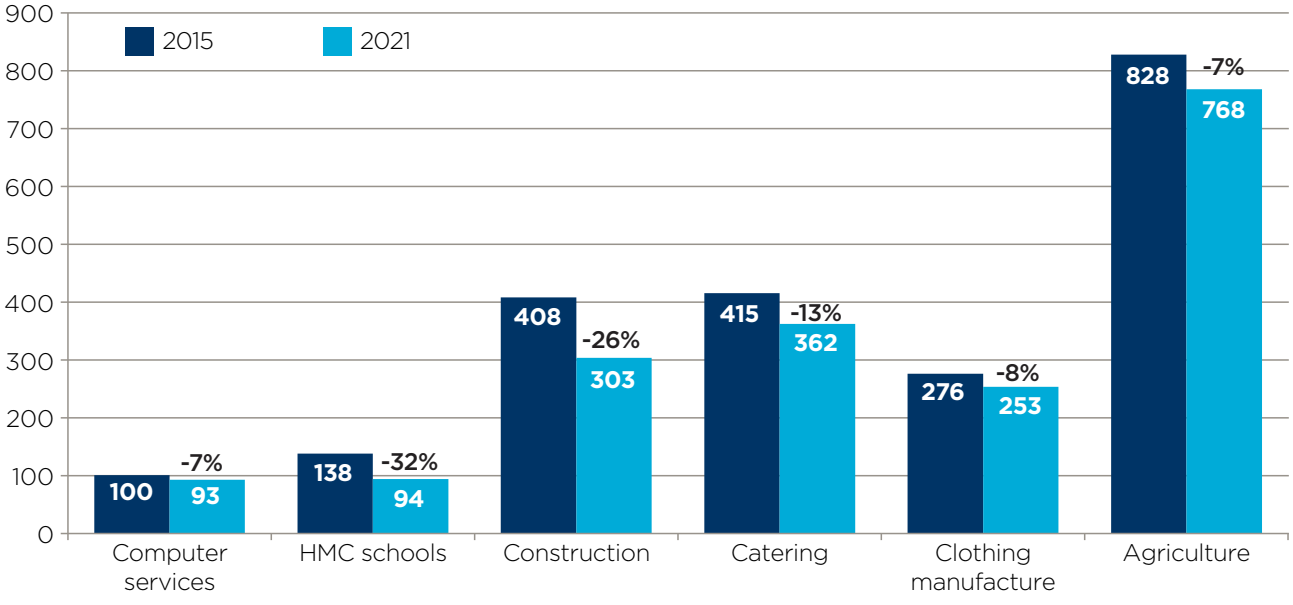
Scope 3 impacts reflect the quantity of goods and services, and capital assets, purchased by each sector, and the industries and countries from which those inputs are sourced. As a general rule, these emissions have fallen over time. This is largely due to the actions taken by supplying industries around the globe to reduce their emissions impact, rather than the actions of the purchasing sectors themselves.[32]

As Fig. 41 illustrates, **HMC schools' Scope 3 emissions intensity is lower than most of the comparator sectors, and has fallen fairly significantly in recent years**. This reflects the quantity of external inputs used by HMC schools (modest relative to the schools' own GVA), the nature of those supplies (skewed towards services rather than goods, compared with the UK average), and the geographical spread of those supplies (relatively few imports, especially from countries where emissions intensity is high).

Fig. 42, meanwhile, shows how the Scope 3 impacts split between those occurring in the UK, and those in the rest of the world. Despite the comparatively low level of direct imports from high-emissions countries, as the model tracks transactions throughout the global supply chain, in total non-UK entities account for just over 40% of the schools' Scope 3 emissions impact. However, that is a lower proportion than in the case of clothing manufacture, agriculture, and computer services.

Fig. 41: HMC schools' Scope 3 GHG emissions in 2015 and 2021, in context

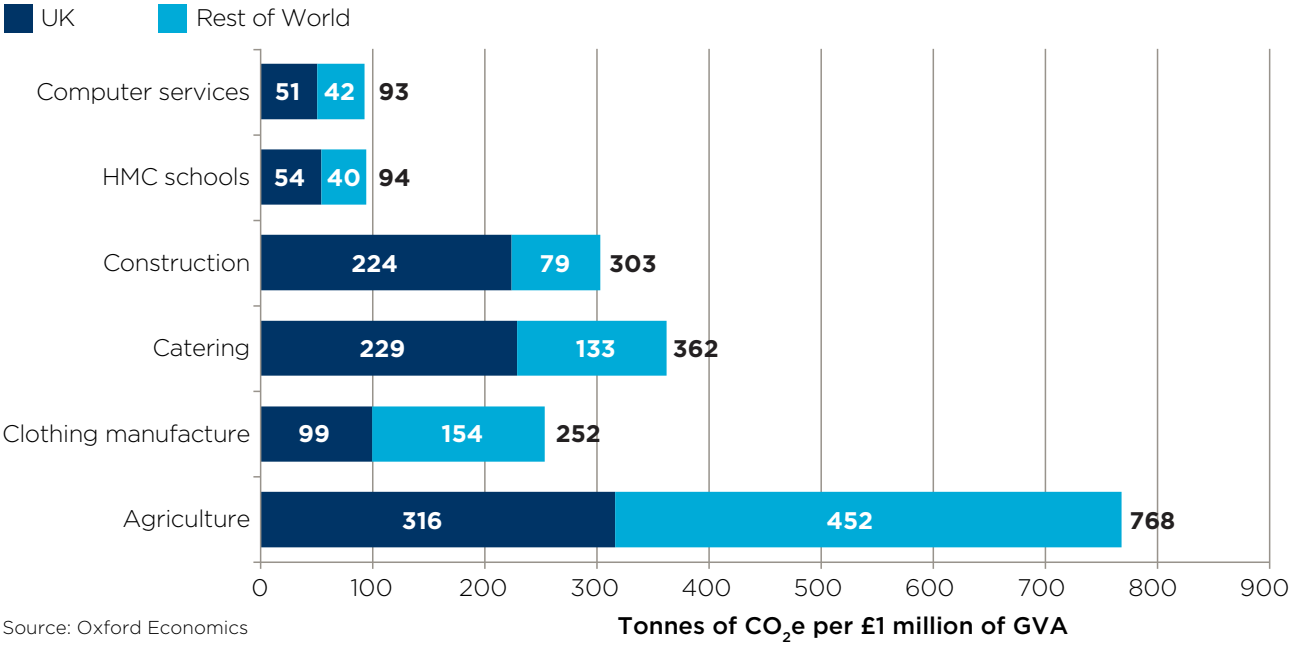
Tonnes CO_2e per £ million of GVA at 2021 prices



Source: Oxford Economics

[32] In practice, the purchasing sectors could have contributed, by adjusting their procurement, but the modelling has not captured this effect in full, as it is based on an assumption that the pattern of purchases by product type was unchanged between 2015 and 2021 (although it does capture shifts in imports by country of supplier).

Fig. 42: Scope 3 GHG emissions in the UK and Rest of the World in 2021

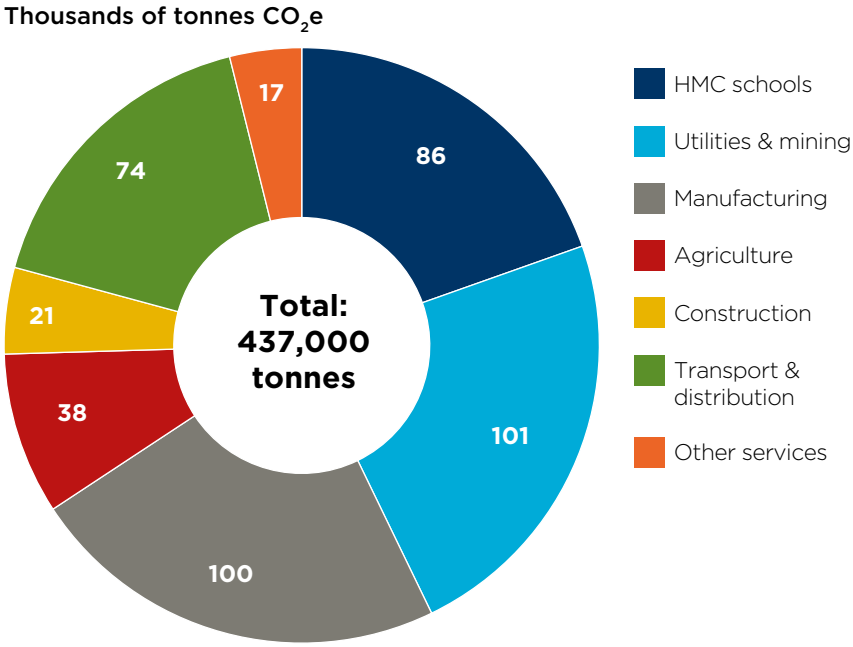


Source: Oxford Economics

5.5 TOTAL GHG EMISSIONS AND ENERGY USE IN DETAIL

Overall, HMC schools themselves accounted for 20% of all emissions associated with their activity (through the Scope 1 impact), with the remainder accounted for by firms in their global supply chain (Scopes 2 and 3) (see Fig. 43). The three most important supply chain industries here are utilities and mining (23% of all emissions), manufacturing (23%), and transport and distribution (17%). Specific examples of these three sectors could include, respectively, mining the silica used to make computer chips, manufacturing computers for schools at a factory, and transporting the chips from the mine to the factory. Agriculture (9%), construction (5%), and other services (4%), account for the remainder.

Fig. 43: HMC schools' total global GHG footprint in 2021, by industry of emitter

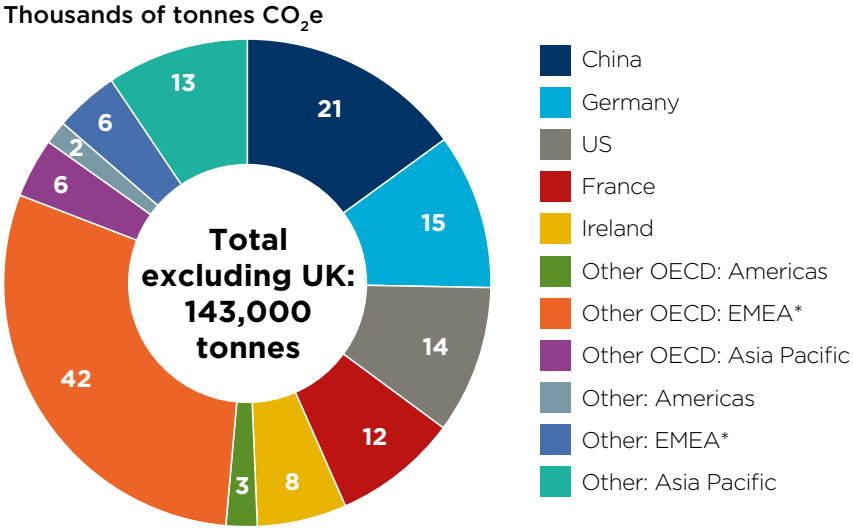


Source: Oxford Economics

In terms of the geographic distribution of the total GHG impact, the UK accounts for 67% of this impact, and the rest of the world for the remaining 33%. The geographic distribution of the latter group is shown in Fig. 44. China is the most significant individual country in 2021 here—accounting for 5% of the combined UK and non-UK total—followed by Germany, the US, France, and Ireland. The remainder is spread around the globe, in terms of both geography and average income of the country concerned.

Finally, total energy use across HMC schools and their entire global supply chain, by power source and on a per-pound-of-GVA basis, is shown in Fig. 45, alongside that of the comparator sectors and their global supply chains.

Fig. 44: HMC schools' non-UK GHG footprint by country grouping[33]



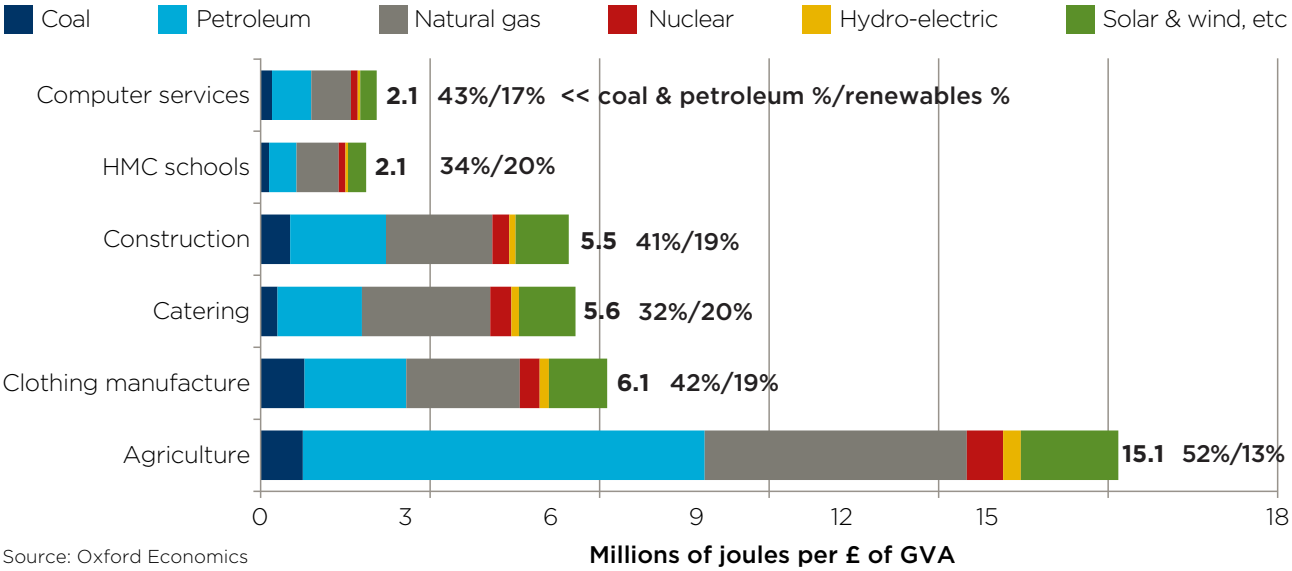
Source: Oxford Economics

*Europe, Middle East, and Africa.

This will be an important driver of the total GHG intensity for each sector, set out in Section 5.1. It can be seen that HMC schools, and their supply chain, compare well, in terms of having low energy use per unit of sector GVA.

The energy mix is also relatively favourable, with the proportion accounted for by coal and petroleum the second lowest of the six sectors, and the proportion accounted for by renewables, the joint highest.

Fig. 45: Total energy use by select sectors and their global supply chains in 2021



Source: Oxford Economics

[33] The OECD grouping, referred to in the chart, is comprised of mainly high-income countries.

APPENDIX 1: RESULTS TABLES

INDUSTRY CLASSIFICATION

Fig. 46: Industry classification used in the charts and tables

Sector in this report	Section in UK Standard Industrial Classification	Notes
Manufacturing & agriculture	Agriculture, forestry, & fishing (A)	
	Manufacturing (C)	Includes repair & installation of machinery.
Mining, energy, water, waste	Mining & quarrying (B)	
	Electricity & gas supply (D)	
	Water supply, sewerage, and waste management (E)	
Construction	Construction (F)	
Wholesale, retail & transport	Wholesale and retail trades; motor vehicle repair (G)	
	Transportation & storage (H)	
Catering & hotels	Accommodation & food service activities (I)	Indirect impacts mainly relate to catering contract workers.
Information & communication	Information & communication (J)	Includes telecommunications, computer-related services, broadcasting, publishing, and information services.
Professional & financial services	Financial & insurance activities (K)	
	Professional, scientific, and technical activities (M)	Includes legal work, accountancy, management consultancy, architectural and engineering consultancy, advertising, and design.
Business support services	Administrative and support service activities (N)	Includes leasing activity, employment agencies, travel agencies, security, cleaning, landscaping, office support, and other business support activities.
Education	Education (P)	All staff directly employed by schools are counted here, whatever their role.
Other services including rent	Real estate activities (L)	Mainly renting of property.
	Public administration (O)	Taxpayer-funded services are excluded from the indirect and induced impacts, so only private work, and activity funded by fees (e.g., planning fees), is counted.
	Human health & social work (Q)	
	Arts, entertainment, & recreation (R)	Recreation includes libraries, museums, gambling, and sports.
	Other service activities (S)	Includes membership organisations, repair of computers and household goods, and personal services such as hairdressing.
	Activities of households as employers (T)	

THE ECONOMIC FOOTPRINT: HMC SCHOOLS

Fig. 47: GVA impacts by channel and region

£ billion, 2021	Direct	Indirect	Induced	Total
North East	0.05	0.02	0.12	0.19
North West	0.21	0.05	0.19	0.46
Yorkshire & The Humber	0.15	0.05	0.20	0.41
East Midlands	0.19	0.05	0.21	0.46
West Midlands	0.27	0.07	0.25	0.59
East of England	0.38	0.10	0.30	0.78
London	0.64	0.15	0.44	1.22
South East	0.96	0.23	0.52	1.71
South West	0.40	0.09	0.28	0.77
Wales	0.05	0.02	0.13	0.20
Scotland	0.28	0.05	0.14	0.47
Northern Ireland	0.00	0.01	0.04	0.05
Total	**3.58**	**0.89**	**2.83**	**7.31**

Fig. 48: GVA impacts by channel and industry

£ billion, 2021	Direct	Indirect	Induced	Total
Agriculture	-	0.00	0.03	0.04
Mining including oil	-	0.00	0.01	0.01
Manufacturing	-	0.09	0.24	0.34
Electricity & gas supply	-	0.02	0.07	0.09
Water & waste services	-	0.01	0.04	0.06
Construction	-	0.19	0.14	0.33
Retail & wholesale	-	0.08	0.49	0.57
Transport & storage	-	0.06	0.14	0.20
Hotels & catering	-	0.07	0.22	0.29
Info & communications	-	0.06	0.18	0.24
Financial services	-	0.02	0.22	0.25
Real estate including rent	-	0.02	0.30	0.32
Professional services	-	0.09	0.19	0.27
Business support services	-	0.08	0.17	0.24
Public administration	-	0.01	0.03	0.03
Education	3.58	0.07	0.08	3.74
Health & social care	-	0.01	0.08	0.08
Arts & entertainment	-	0.00	0.08	0.08
Other services	-	0.02	0.10	0.12
Household as employers	-	0.00	0.02	0.02
Total	**3.58**	**0.89**	**2.83**	**7.31**

Fig. 49: Employment impacts by channel and region

Thousands of jobs, 2021	Direct	Indirect	Induced	Total
North East	0.92	0.48	2.30	3.70
North West	4.57	1.04	3.69	9.30
Yorkshire & The Humber	3.45	1.06	3.84	8.35
East Midlands	4.42	1.09	4.20	9.71
West Midlands	6.04	1.36	4.68	12.08
East of England	8.24	1.84	5.29	15.37
London	10.92	2.14	4.76	17.82
South East	21.37	4.18	9.51	35.06
South West	9.76	1.86	5.49	17.11
Wales	1.06	0.47	2.79	4.32
Scotland	4.91	0.94	2.69	8.54
Northern Ireland	0.00	0.10	0.78	0.88
Total	**75.66**	**16.56**	**50.02**	**142.24**

Fig. 50: Employment impacts by channel and industry

Thousands of jobs, 2021	Direct	Indirect	Induced	Total
Agriculture	-	0.16	1.02	1.18
Mining including oil	-	0.01	0.02	0.03
Manufacturing	-	1.32	3.27	4.59
Electricity & gas supply	-	0.11	0.37	0.48
Water & waste services	-	0.07	0.21	0.28
Construction	-	2.05	1.53	3.58
Retail & wholesale	-	1.27	10.78	12.05
Transport & storage	-	1.30	2.64	3.94
Hotels & catering	-	3.20	10.34	13.54
Info & communications	-	0.73	1.61	2.34
Financial services	-	0.18	1.41	1.59
Real estate including rent	-	0.12	1.32	1.44
Professional services	-	1.45	2.97	4.42
Business support services	-	2.11	3.61	5.72
Public administration	-	0.07	0.38	0.45
Education	75.66	1.75	2.00	79.41
Health & social care	-	0.23	2.48	2.71
Arts & entertainment	-	0.08	1.80	1.88
Other services	-	0.35	1.90	2.25
Household as employers	-	0.00	0.36	0.36
Total	**75.66**	**16.56**	**50.02**	**142.24**

Fig. 51: Tax impacts by channel and type of tax

£ billion, 2021	Direct	Indirect	Induced	Total
Employee income tax	0.36	0.05	0.13	0.55
Employee NICs	0.20	0.03	0.09	0.32
Employer NICs	0.26	0.04	0.11	0.41
Corporation tax	0.00	0.02	0.10	0.12
Business rates, etc	0.01	0.02	0.06	0.09
Taxes on business supplies	0.15	0.03	0.09	0.27
Taxes on employee spending	0.00	0.00	0.43	0.43
Total	**0.98**	**0.20**	**1.01**	**2.19**

THE ECONOMIC FOOTPRINT: ALL INDEPENDENT SCHOOLS

Fig. 52: Overview of economic impacts by channel

	Direct	Indirect	Induced	Total
GVA impact, £ billion	8.00	2.05	6.47	16.52
Employment impact, thousands	175.62	39.01	113.42	328.05
Tax impact. £ billion	2.32	0.46	2.28	5.06

SAVINGS TO THE TAXPAYER

Fig. 53: Derivation of the taxpayer savings estimate

Approximate annual values, 2021	Value per pupil, £	Number of pupils, thousands	Total value, £ billion
Recurrent spending:			
Annual spending by state schools and trusts	6,414	9,888	63.43
Of which: pupil premium	402		3.97
State spending excluding pupil premium	6,012		59.45
Saving due to attendance at an HMC school[34]	6,220	227	1.41
Add: saving on pupil premium for HMC pupils	14		0.00
Deduct: state funding for HMC school pupils[35]	102		0.02
Saving on recurrent spending	6,132		1.39
Capital spending:			
Saving due to cost or opportunity cost of land[36]	1,392		0.32
Saving due to new building work[36]	332		0.08
Saving due to capital-funded maintenance	190		0.04
Saving on capital spending	1,913		0.43
Total saving: HMC schools	**8,046**		**1.83**
Approximate saving: all independent schools[37]	**8,263**	**537**	**4.44**

Source: Oxford Economics estimates based on data from the Independent Schools Council and various official sources, as described in Appendix 2.

[34] Relates to HMC school pupils eligible for a UK state school place, excluding the pupil premium. The average per-pupil figure differs slightly to the average cost per state school pupil as it adjusts for region and type of school.
[35] Local authority funding and the Government Music and Dance Scheme.
[36] Annualised costs.
[37] The average cost per pupil differs to the HMC figure, reflecting differences in the regional distribution of the pupils concerned, and in the primary / secondary school split.

Fig. 54: State spending on primary and secondary education not in schools' budgets

	£ billion
Estimated total UK net state education expenditure in 2021	101.9
Of which: net capital outlays	10.2
Recurrent net state education spending	91.7
Of which: pre-primary and post-secondary education[38]	10.1
applied research and development relating to education[39]	5.7
strategy, policy, oversight, and information provision[40]	2.3
students' transport, food, lodging, and medical support[41]	3.4
Recurrent net spending on primary and secondary education[42]	70.1
Of which: included in schools' and trusts' budgets	63.4
Primary and secondary education spend not in schools' budgets	6.7

Source: Oxford Economics interpolation of HM Treasury, Public Expenditure Statistical Analyses 2021, and of Department for Education spending statistics.

THE IMPACT OF COVID-19 AND BREXIT

Fig. 55: Expected and actual out-turns for HMC GVA and jobs impacts, and contributing factors

	Levels				Annual % change		2021 shortfall as % expected
	2015	2019	2021 expected	2021 actual	2015-2019	2019-2021	
Pupil numbers (thousands)	245.6	255.0	259.8	264.6	0.9%	1.9%	-
Fees per pupil (£ at 2021 prices)	16,832	17,867	18,408	16,856	1.5%	-2.9%	8.4%
£ billion at 2021 prices:							
Fee income	4.13	4.56	4.78	4.46	2.5%	-1.1%	6.8%
Procurement in opex	0.95	1.05	1.11	0.88	2.6%	-8.9%	21.1%
Direct GVA	3.18	3.50	3.67	3.58	2.4%	1.2%	2.4%
Capital procurement	0.40	0.47	0.50	0.31	3.9%	-18.5%	38.6%
Total procurement	1.35	1.52	1.61	1.19	3.0%	-11.7%	26.6%
Indirect GVA	1.02	1.15	1.22	0.89	3.0%	-11.8%	26.7%
Direct plus indirect GVA	4.20	4.65	4.89	4.48	2.6%	-1.9%	8.5%
Induced GVA	2.65	2.93	3.08	2.83	2.6%	-1.7%	8.1%
Total GVA impact	**6.85**	**7.58**	**7.97**	**7.31**	**2.6%**	**-1.8%**	**8.3%**
Thousands of jobs:							
Direct employment	71.0	75.0	77.1	75.7	1.4%	0.4%	1.9%
Indirect employment	19.0	20.9	21.8	16.6	2.3%	-10.9%	24.2%
Direct plus indirect employment	90.1	95.9	99.0	92.2	1.6%	-1.9%	6.8%
Induced employment	47.1	50.7	52.6	50.0	1.9%	-0.7%	4.9%
Total employment impact	**137.2**	**146.6**	**151.6**	**142.2**	**1.7%**	**-1.5%**	**6.2%**

Notes: Fee income = pupil numbers x fees per pupil. Direct GVA = fee income - procurement in opex.
Total procurement = procurement in opex + capital procurement.

[38] Class 9.11 and groups 9.3-9.5 in the United Nations Classification of the Functions of Government (COFOG).
[39] Group 9.7.
[40] Group 9.8, 'education not elsewhere classified'.
[41] Group 9.6, 'subsidiary services to education'.
[42] Class 9.12 and group 9.2.

Fig. 56: Estimated pupil numbers by nationality, for independent HMC schools in the UK

	Number of pupils by nationality			Annual % change	
	2015	2019	2021	2015-19	2019-21
Total World	**245,551**	**254,981**	**264,579**	**0.9%**	**1.9%**
UK	223,979	228,530	237,040	0.5%	1.8%
France	709	1,064	1,052	10.7%	-0.6%
Germany	1,746	1,976	2,149	3.1%	4.3%
Spain	880	1,077	1,107	5.2%	1.4%
Ireland	544	878	890	12.7%	0.7%
Rest of EEA	2,908	3,947	3,993	7.9%	0.6%
Total EEA	6,787	8,942	9,191	7.1%	1.4%
Hong Kong	2,966	3,490	4,728	4.2%	16.4%
Non-EEA Europe other than Russia	655	817	797	5.7%	-1.2%
US	1,379	1,542	1,587	2.8%	1.4%
Other Americas	509	528	673	0.9%	12.9%
Middle East	361	403	464	2.8%	7.3%
Nigeria	746	703	692	-1.5%	-0.8%
Other Africa	558	659	719	4.2%	4.5%
India	559	636	726	3.3%	6.8%
Mainland China	2,914	4,734	4,325	12.9%	-4.4%
Other Asia Pacific	2,369	2,728	2,569	3.6%	-3.0%
Russia	1,769	1,269	1,068	-8.0%	-8.3%
Total Rest of World	14,785	17,509	18,348	4.3%	2.4%
Of which:					
Hong Kong	2,966	3,490	4,728	4.2%	16.4%
Mainland China, Other Asia Pacific, Russia	7,052	8,731	7,962	5.5%	-4.5%
All other Rest of World	4,767	5,288	5,658	2.6%	3.4%

Fig. 57: Pupil numbers by nationality: expected and actual out-turns in 2021, and shortfalls

	Levels				2021 as % expected	
	2015	2019	2021 expected[43]	2021 actual	Out-turn	Shortfall
Total World	**245,551**	**254,981**	**260,576**	**264,579**	**101.5%**	**-**
UK	223,979	228,530	230,840	237,040	102.7%	-
EEA	6,787	8,942	10,311	9,191	89.1%	10.9%
Rest of World	14,785	17,509	19,425	18,348	94.5%	5.5%
Of which:						
Hong Kong	2,966	3,490	3,786	4,728	124.9%	-
Other Asia Pacific[44] & Russia	7,052	8,731	10,056	7,962	79.2%	20.8%
All other Rest of World[45]	4,767	5,288	5,583	5,658	101.3%	-

[43] Expected out-turns are estimated on a country-by-country basis, and then summed to arrive at the regional and global totals.
[44] Excluding India.
[45] Non-EEA Europe other than Russia, Americas, Middle East, Africa, and India.

ENVIRONMENTAL IMPACTS

Fig. 58: HMC schools' greenhouse gas emissions impact

	Total (thousands of tonnes CO_2 equivalent)	Per pupil (tonnes CO_2 equivalent)	Per £ million GVA at 2021 prices (tonnes CO_2 equivalent)
2021			
Total	**437**	**5.78**	**122**
Of which:			
Scope 1	86	1.13	24
Scope 2	14	0.18	4
Scope 3	338	4.47	94
Of which:			
UK	195	2.57	54
Rest of World	143	1.89	40
2015			
Total	**543**	**7.64**	**171**
Of which:			
Scope 1	87	1.22	27
Scope 2	17	0.23	5
Scope 3	439	6.18	138
Of which:			
UK	240	3.38	75
Rest of World	199	2.80	63

Fig. 59: HMC schools' energy use mix

Total use (trillion joules)							
	Coal	Petroleum	Natural gas	Nuclear	Hydro-electric	Other renewables	Total
2021							
Total	501	1,683	2,563	403	174	1,099	6,423
Of which:							
Schools' energy use	43	495	697	127	18	406	1,785
Supply chain use	458	1,189	1,866	276	157	694	4,639
2015							
Total	1,391	2,249	2,592	575	211	595	7,613
Of which:							
Schools' energy use	243	551	567	161	14	186	1,722
Supply chain use	1,148	1,698	2,025	414	197	409	5,890
Use per £1 of HMC school GVA at 2021 prices (thousand joules)							
	Coal	Petroleum	Natural gas	Nuclear	Hydro-electric	Other re-newables	Total
2021							
Total	140	470	715	112	49	307	1,792
Of which:							
Schools' energy use	12	138	194	36	5	113	498
Supply chain use	128	332	521	77	44	194	1,294
2015							
Total	437	707	814	181	66	187	2,392
Of which:							
Schools' energy use	76	173	178	51	5	58	541
Supply chain use	361	534	636	130	62	129	1,851

APPENDIX 2: METHODOLOGY

ECONOMIC FOOTPRINT

HMC schools' direct impacts

Oxford Economics was provided with details of the number of pupils, teachers, teaching assistants, and schools, by region and type of school (e.g., primary or secondary), for HMC schools, as of January 2022. Some additional data on the HMC pupil profile was also provided, including nationality and parental residence (UK / abroad), with further information available in the ISC Census and Annual Report 2022, most importantly the split between boarding and day pupils.

Whilst Oxford Economics did not have any information specifically on HMC schools' income or finances, this exercise forms part of a wider study of the impact of all ISC schools, allowing Oxford Economics to combine information on HMC pupils and teachers with relevant financial ratios for ISC schools as a whole, to arrive at financial estimates for HMC schools.

The starting point for the analysis is estimated fee income in the academic year, on a region-by-region basis. To arrive at these figures, Oxford Economics combined HMC pupil data by region with the national level split of HMC pupils between boarders, day pupils at boarding schools, and day school pupils, and ISC data on this split by region (for all ISC pupils), to arrive at the estimated HMC pupil profile by boarding status and region. We then estimated the total fee income using average fees for ISC schools, for each boarding status in each region.

Oxford Economics then estimated the following categories of expenditure and profits, for all HMC schools, based on the ratio of HMC schools' fee income to all ISC schools, on a region-by-region basis. The estimates relate only to the schools' core operations (teaching, extra-curricular activities, accommodation, and catering, etc), excluding trading, fundraising, and financing activities.

- Total employment costs for all teachers, teaching support staff, and other directly-employed staff (e.g., catering staff where these roles are not contracted out).
- Payments to third party businesses, within core operating expenditure.
- Capital depreciation.
- The financial surplus on core activities (equivalent to 'EBIT'—profits before interest and corporation tax—in company accounts).
- Payments of "taxes on production" to UK authorities, such as business property rates, business vehicle excise duty, and the apprenticeship levy.

Oxford Economics then estimated how the above payments to third party businesses would be split between the following categories, based on ratios for non-profit education institutions in the most recent, detailed version of the UK input-output table.[46]

- "Taxes on products" built into the cost of supplies purchased, such as unrefunded VAT, "green" levies added by electricity suppliers, and petrol duty on transport for business purposes.
- Amounts received by suppliers of goods and services based overseas, net of UK taxes.
- Net-of-tax amounts received by domestic suppliers, on an industry-by-industry basis.[47]

Direct GVA was then taken as the sum of employment costs, capital depreciation, the financial surplus, and "taxes on production". (Employment costs account for the overwhelming majority of these contributors, and capital depreciation for most of the remainder.)

[46] An input-output table is an officially-published matrix, showing transactions between different domestic industries, sales by those industries to final customers of different types (e.g. domestic households or overseas customers), and purchases by those industries from suppliers overseas. Taxes on products such as excise duties and unrefunded VAT, paid by the purchaser but not received by the supplier, are also identified separately.

[47] In the case of goods, this value is split between the manufacturer and wholesaler, where the latter's share is the "gross margin" made on trading in the product—i.e. the profit before accounting for any business running costs.

Direct employment was worked out as the total of all teaching and support staff, on a headcount basis. Teacher numbers were provided by HMC (via ISC), and support staff numbers were then estimated by applying support-staff-to-teacher ratios for each region, from the ISC school estimates (based in turn on employment data from Baines Cutler Solutions Ltd).

The direct tax contribution was then estimated by Oxford Economics, using the following methods:

- Employees' income tax and NICs, employers' NICs, and business rates, were scaled from the ISC total in line with the HMC share of employment costs and fee income in each region.
- The schools' taxes on products purchased (mainly unrefunded VAT) are calculated using information from UK national accounts.
- Corporation tax was assumed to be negligible due to the not-for-profit status of the schools.

The original ISC tax dataset had been estimated by Oxford Economics, taking into account the schools' income, cost components, and profits, together with key features the UK tax system in 2021.

It should be noted that the direct tax impact figures, as well as indirect and induced taxes, are estimated in this way, and so do not take all of the nuances of the UK tax system into account. They are not based on specific information about the schools' tax payments, and so may not reflect either the amounts actually paid, or the tax liability, in a fully accurate way. They do however take the broad principles of the system applied to independent schools into account, for example the lack of VAT on school fees, the inability to reclaim VAT on items purchased, and limited payments of business rates.

HMC schools' indirect impacts

The starting point for the indirect (supply chain) impact is formed by the net-of-tax amounts received by domestic suppliers, on an industry-by-industry basis. For this study, these purchases include items of a capital nature, based on estimated capital expenditure undertaken by HMC schools. HMC schools' share of all ISC school capital expenditure is calculated in line with the schools' share of all ISC school fee income, on a region-by-region basis. This also includes allowances for taxes and imports as estimated by Oxford Economics using relevant input-output table ratios. These domestic capital supplies were put onto an industry-by-industry basis (mainly construction, but also some computer and other equipment), and added to purchases counted in the schools' core operating expenditure. The latter were also allocated to supplying industries, based on ratios for the not-for-profit education sector in the input-output table.

These amounts were then fed into the Oxford Economics UK and Regional Economic Impact Model. This combined them with a further set of ratios in the input-output table, to arrive at total sales values across the entire UK supply chain of the schools. The indirect GVA impact was derived from there, using the GVA-to-sales ratios for each industry, as implicit in the input-output table, and the indirect jobs impact from there, using official data for GVA and jobs on an industry-by-industry basis. The indirect employment estimate therefore relies on an implicit assumption that the labour productivity (GVA per job) of each business in the schools' supply chain matches the average productivity of that business's industry. Supply chain jobs can include self-employed as well as employee jobs.

Tax impacts are worked out by breaking the sales values of each industry into various components (employment costs, profits, purchases from third parties, etc), and applying tax-to-income and tax-to-spending ratios drawn from various official sources.

HMC schools' induced impacts

The induced (salary-funded expenditure) impact is effectively calculated in two parts. Sales values supported by the spending of workers in the supply chain are worked out within the model, alongside the indirect impact, taking into account the share of each supply chain industry's GVA that is accounted for by the workers' after-tax earnings, and UK household spending by industry of domestic supplier, after allowing for imports and sales taxes. The same scaling factors used for the indirect impacts are then applied, to derive the induced GVA, jobs and tax impacts from this sales figure.

The spending power of HMC schools' own employees is then worked out, by deducting income tax, NICs and pension contributions from employee compensation, as estimated for the direct impacts. This is fed into the model, to arrive at the induced values supported by these employees' spending. These values in turn are added to the (less significant) values supported by supply chain workers, to arrive at the total induced impacts.

HMC schools' total economic footprint

The total GVA, employment, and tax footprint is simply the sum of the relevant direct, indirect, and induced impacts. All of the estimates relate to HMC schools that are non-state-funded and based in the UK (England, Scotland, Wales, and Northern Ireland). The results therefore exclude a few HMC schools based in the Channel Islands and Isle of Man, and all HMC schools in Northern Ireland as they are state-funded.

Economic impacts of all independent schools

The impacts of all independent schools are calculated by scaling up the results from the parallel exercise for all ISC schools, using ratios for pupil numbers on a region-by-region basis.

HMC schools' impact by region

As all of the data were provided to Oxford Economics on a regional basis, the direct impact by region (in the Appendix 1 results tables), was calculated as part of the process of arriving at the national direct impact. The direct regional impacts simply reflect the location of the schools concerned.

The indirect and induced were calculated by the Economic Impact Model (see above) on a region-by-region basis. These regional impacts reflect the economic activity supported in that region by the spending of all HMC schools. This is not necessarily the same as the economic impact supported by the schools based in that region, as spending by a school in one region can support activity right across the UK. (However, a disproportionate amount of indirect and induced activity will be supported locally, especially in the case of service provision and construction work, as opposed to goods production.)

SAVINGS TO THE TAXPAYER

Number of HMC school pupils eligible for a free UK state school place

The number of HMC school pupils who would otherwise be eligible for a free UK state school place was estimated, by region and school type, by deducting from the total those pupils aged below four, or over 18, on the eve of the school year (31 August). Non-British pupils were also deducted, with the exception of EEA nationals whose parents lived in the UK.

Recurrent state spending per school pupil by region and type of school

Oxford Economics sourced data on primary and secondary state school pupil numbers[48], and state funded recurrent (non-capital) spending by schools and trusts[49], to arrive at estimates of average state school recurrent spending per pupil in 2021, by region and type of school.

[48] Department for Education, Schools, pupils and their characteristics, January 2022; Scottish Government (scot.gov), Summary statistics for schools in Scotland 2021; Welsh Government (StatsWales), Pupils by local authority, region and type of school (2020/21); Department of Education / Northern Ireland Statistics and Research Agency, Key Statistics (2020/21).

[49] Department for Education, Local Authority Maintained Schools Expenditure (2015/16-2020/21); Department for Education, Academy Schools Sector in England: Consolidated Annual Report and Accounts (2019/2020); Scottish Government, Government Expenditure and Revenues Scotland (GERS) (2020/21); Welsh Government, Key Education Statistics Wales, 2019. Where data relate to earlier years figures are scaled by Oxford Economics based on pupil numbers and the trend in spending per pupil elsewhere. Spending on schools in Northern Ireland is scaled from all state spending on primary and secondary education in that country, in 2019/20, as reported in HM Treasury, Public Expenditure Statistical Analysis (PESA).

Total taxpayer saving per eligible HMC school pupil

Potential taxpayer savings per HMC school pupil, relating to recurrent spending, were assumed to be equal to recurrent costs per state school pupil, but with a few adjustments. These adjustments involved deducting the pupil premium for state school pupils, adjusting for the mix of schools attended by eligible HMC school pupils, in terms of region and school type (primary or secondary), adding back the pupil premium likely to be paid to HMC school pupils if they attended a state school instead, and deducting present Government funding for HMC school pupils.[50]

The estimated capital expenditure required, per HMC pupil in each region if they took up a free school place, was then calculated as the sum of three elements:

- **Land costs:** The number of new state schools needed, for each school type in each region, was derived from the number of eligible HMC school pupils, based on the existing average number of state pupils per school.[51] The required land area was derived from there, based on official guidance on space requirements.[52] The total up-front cost of that land was derived from there, based on the average cost of land in residential areas across each region, except in London where land purchase was assumed to be limited to the third of boroughs where land costs were cheapest.[53] This upfront cost was then converted into an annualised cost per pupil, based on annual rental yields for land in appropriate (i.e. non-industrial) zones.[54]
- **New building work:** Building costs for a typical new primary school, and typical new secondary school, were based on reported costs in a National Audit Office report[55], uprated to 2021 values using the most appropriate construction output price index[56]. Cost differentials across the regions were then estimated, based on relative salaries[57], with the resulting costs per school multiplied by the number of new schools needed to arrive at the total up-front cost in each region. These upfront costs were put onto per-pupil basis, and then onto an annualised basis by dividing by 50, based on an assumption that each school would last 50 years.[58]
- **Maintenance work funded out of capital budgets:** This used figures for annual capital budgets for school maintenance work from the same NAO report, uprated them to 2021 values in line with the most appropriate construction price index[59], and put them onto a per-pupil basis. Regional cost differentials were then applied, based on salary differentials[60], to arrive at per-pupil costs per region.

These three types of capital-related taxpayer savings were added to recurrent cost savings, to arrive at the taxpayer saving per eligible HMC school pupil in each region.

[50] The pupil premium applies only in those attending a state-funded school in England, and taxpayer costs are based on data published by the Department for Education. The would-be cost of the pupil premium for HMC school pupils is based on the number of pupils qualifying for a full means-tested bursary or scholarship funded by the ISC school, and the relevant premium (which varies between primary or secondary school pupils). Existing Government support comprises funding by Local Authorities, and the Government Music and Dance Scheme, as reported for all ISC school pupils in the ISC Census and Annual Report 2022 and scaled down from there.
[51] The number of state schools is found in the same sources as the number of state pupils.
[52] Department for Education, Area guidelines for mainstream schools (building bulletin 103), June 2014, and Department for Education, Area guidelines for SEND and alternative provision (building bulletin 104), December 2015. The guidelines relate to England, but we assume that the same principles would apply in Scotland, Wales and Northern Ireland.
[53] Value Office Agency, Land value estimates for policy appraisal in 2019. The values are inflated to 2021 prices in line with ONS House Price Index.
[54] Savills Research data on prime yields, published January 2022.
[55] National Audit Office, Capital funding for schools, February 2017.
[56] ONS, Construction output price indices. The index for new public sector non-residential construction work, other than infrastructure, was used.
[57] ONS Annual Survey of Hours and Earnings (ASHE). 'Construction of buildings' mean wage, by region.
[58] This is in line with the assumption made in the previous reports for ISC, which reflected the 2% per annum capital allowance for buildings and structures, within the UK corporation tax system, available at the time. The allowance has since changed to 3%—on which basis a building's lifespan would be 33 years rather than 50—but we have kept the assumption unchanged for these purposes.
[59] ONS, Construction output price indices. The index for non-residential repair and maintenance work was used.
[60] ONS Annual Survey of Hours and Earnings (ASHE). 'Specialised construction work' mean wage, by region.

THE IMPACT OF COVID AND BREXIT

Initial estimates of GVA and employment "shortfalls" in 2021 for all ISC schools

Oxford Economics was provided with data by the ISC, relating to January 2016 and January 2020, and Baines Cutler, relating to the academic years ending in August 2015 and August 2019. Oxford Economics then estimated economic impacts for all ISC schools for 2015, 2019, and 2021, based on fee income and spending by category in the Baines Cutler sample datasets, scaled up to the whole ISC total in line with pupil numbers. These estimates were made on a stylised basis, as they relied upon national-level data only. They were then re-scaled slightly, to bring the stylised results for 2021 into line with the actual results, which capture the influence of regional differentials.

The average annual growth rate between 2015 and 2019, for each of the GVA and employment impacts, was taken to be the pre-2020 growth "trend". The 2019 results were then grown forward, using the trend rate, to arrive at estimates for the expected values in 2021, had there been no economic shocks. The actual out-turns were then compared to these expectations, to identify the percentage shortfall in each GVA and employment impact.

We also looked at shortfalls in the key arithmetic drivers underlying those impacts, i.e., pupil numbers, average fees per pupil, procurement with operating expenditure, and capital procurement.

The following arithmetic applies:

- Fee income = pupil numbers x average fee per pupil.
- Direct GVA = fee income – procurement in operating expenditure.
- Direct GVA = employment costs + capital depreciation + financial surplus + business rates.
- Total procurement = procurement in operating expenditure + capital procurement.
- Indirect GVA: driven by total procurement.
- Induced GVA: driven by employment costs within direct and indirect GVA.
- Total GVA = direct GVA + indirect GVA + induced GVA.
- Employment in a channel (direct / indirect / induced): influenced by GVA in that channel.

Deriving estimates of "shortfalls" for HMC schools

The estimates were then re-cast to reflect the impacts of HMC schools specifically, taking into account the HMC 2021 results set, the known number of HMC school pupils in 2015 and 2019 (as reported via the ISC), and an assumption that the percentage differential between average fees per pupil for HMC schools, and those for non-HMC ISC schools, was the same in 2015 and 2019 as in 2021.

Attributing the "shortfalls" to potential "drivers"

Oxford Economics then analysed data relating to the UK economy and HMC schools sector, in order to determine the underlying drivers of those impacts. In principle these would be:

- The impact of Covid-19, either directly on the schools' operations, or—because of the wider economic effects—on parents' ability to pay the fees, or both.
- The impact of Brexit, either directly on school pupil numbers, or—because of any wider economic effects—on parents' ability to pay the fees, or both.
- Any other special factors affecting the wider UK economy, and, therefore, parents' ability to pay the fees.
- Any other special factors affecting the schools directly.

The possible role of any other special factors was ruled out for 2021 (which was prior to the Ukraine-related spike in energy, fuel, and food prices). An analysis of international trade patterns, price trends,

and labour supply was unable to identify any clear and unambiguous impact of Brexit on the UK economy, in the two years following that event, suggesting that Covid-19 was by the dominant factor underlying the economic slowdown and associated squeeze on household finances.

Turning to the HMC schools sector specifically, the fact that the shortfall in fee income was accounted for by the shortfall in average fees per pupil, rather than disappointing pupil numbers, is also consistent with Covid-19 being the dominant influence. This view is reinforced by the knowledge that most schools discounted fees in 2020 and 2021, specifically in response to Covid-related restrictions.[61] An analysis of trends in HMC pupil numbers by nationality suggested that there could have been a "Brexit Effect" in 2021, but that this would have been very limited as a share of the overall shortfalls found.

ENVIRONMENTAL IMPACT

The environmental impacts were modelled in two parts: domestic and international. For the domestic impacts, the starting point was provided by the fee income of the schools, and the sales values along the whole of the UK supply chain—i.e. the starting point for calculating the direct and indirect economic impacts as described above. The schools' fee income formed the starting point for the Scope 1 environmental impacts, while sales of electricity and gas directly to the schools formed the starting point for Scope 2. The remaining sales along the UK supply chain, excluding those electricity and gas sales, provided the starting point for Scope 3.

For each scope, sales were allocated across the 36 industry categories used in the Oxford Economics Global Sustainability Model (GSM)—so just "education" for Scope 1, and just "utilities" for Scope 2, but sectors of all kinds for Scope 3. A set of ratios was then taken from the GSM for kilogrammes of CO2-equivalent emissions per pound of sales, for each UK industry of supplier separately. These were combined with the sales values by scope and industry to arrive at total greenhouse gas emissions within the UK, by scope. Ratios relating to energy use (measured in joules) per pound of the schools' GVA, for six types of power source (coal, petroleum, etc), were also taken from the GSM, to arrive at the energy use mix, which is a key determinant of gas emissions.

For international impacts, imports (including capital supplies) were allocated to product types, in line with education sector imports in the UK national accounts, and then to countries (on a stylised basis), using data from the Oxford Economics Global Trade Model (sourced in turn from the UN Commodity Trade Statistics Database). The schools' entire procurement spend (including domestic as well as imported supplies), by industry and country of supplier, was then fed into the GSM, which returned the results for GHG emissions and energy use by power source, by country and industry. This allowed the effect of imports further along the UK supply chain to be captured.

The UK results were then excluded, leaving the international impacts to be added to the domestic results described above. (The domestic results derived in that way will be more accurate than the UK results calculated within the GSM.)

[61] Baines Cutler Solutions Ltd, National Independent Schools Benchmarking Survey 2022, The financial impact of Covid.

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The modelling and results presented here are based on information provided by third parties, upon which Oxford Economics has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

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