Are lower fees for EU students really a cost?

What the 2021 fee increase tells us about demand for a UK degree

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Abstract

The EU's request that its students regain access to home tuition fees at UK universities has been treated in the UK as a concession with a price tag of £0.6–1.2 billion. Those figures value the status quo at current EU enrolments and assume no demand response. Using the 2021 withdrawal of home-fee status as a natural experiment, with non-EU students at the same university as a control group, I estimate the price elasticity of EU demand for a UK degree by university. Demand at Russell Group universities is relatively inelastic (median elasticity around -1.3); demand elsewhere is highly elastic (medians around -2, with a long tail). Reversing the 2021 change – putting EU students back on home fees – would raise universities' fee income from EU students by up to 56 per cent, and by between a fifth and a third under the more conservative designs. The gains would accrue to non-Russell Group institutions, many of which are currently in financial difficulty, while the Russell Group would lose. The "cost" of the EU's demand is, at most, a cost to the elite institutions.

1 The debate

A wide spectrum of commentators seem upset about the demand by the EU to allow lower tuition fees for EU students as part of the latest UK–EU agreement. The framing has been remarkably consistent: a concession to Brussels, paid for by universities that can ill afford it. The *i* put the "Brexit reset bill" at £580m; *Times Higher Education* called EU fees a "£1.2 billion bargaining chip"; UK sources briefed that any reduction was a "non-starter". At the November 2026 summit the question was parked for six months, with the EU asking for home fees and the UK offering at most a reduced international rate.

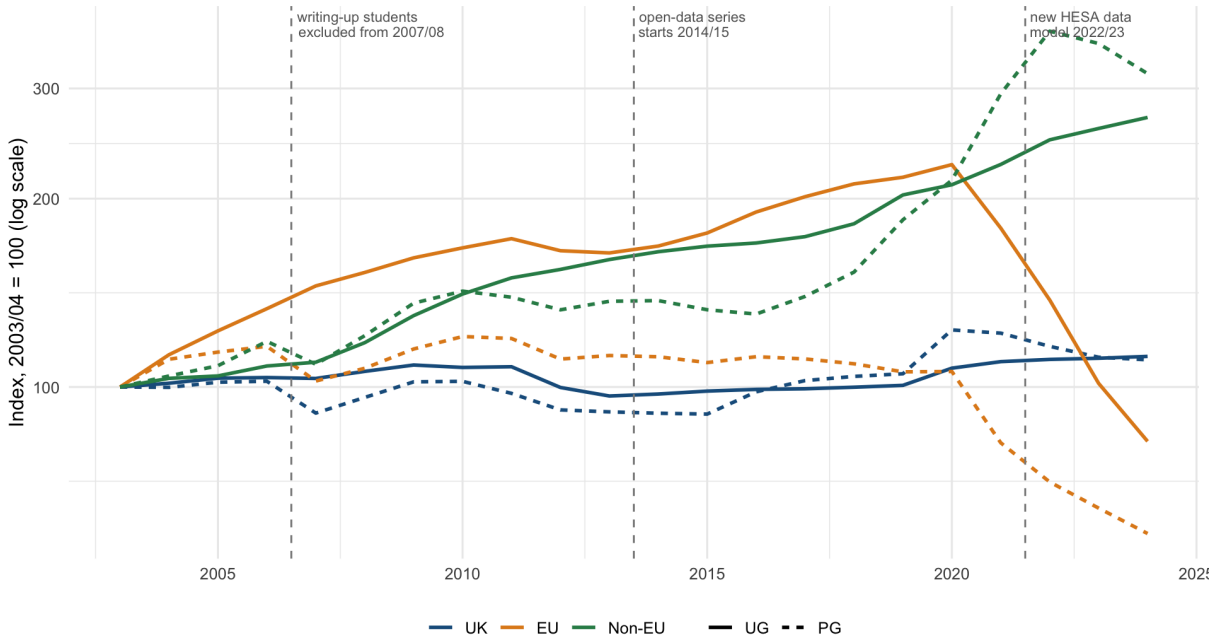
Underneath the disagreement about whether the price is worth paying sits an assumption that has not been examined: that there *is* a price. The figures being quoted are the fee income universities book from EU students today, at today's EU student numbers. They assume that if fees fell, nobody extra would come.

The UK ran the experiment in reverse. From August 2021, EU students starting courses in England lost home-fee status and access to Student Finance England loans, and moved to international fees. What happened next tells us how price-sensitive demand for a UK degree is, and therefore what reversing the change would do.

2 What happened to EU students

Indexed to 2003/04, EU enrolments at UK universities grew steadily for fifteen years, faster than UK enrolments and roughly in line with non-EU enrolments, and then from 2021/22 fell off a cliff (Figure 1). EU undergraduate numbers dropped by about 60% in four years and EU postgraduate numbers by more than half, while non-EU numbers kept rising; by 2024/25 there were fewer EU students in the UK than in 2003/04. In levels (Appendix Figure 4), EU undergraduate enrolments fell from about 81,000 in 2014/15 to 39,000 in 2024/25 and EU postgraduate enrolments from 46,000 to 24,000, while over the same decade non-EU enrolments rose by two-thirds at undergraduate level and more than doubled at postgraduate level.

Figure 1: Enrolments at UK HE providers by origin and level, index 2003/04 = 100 (log scale)



Notes: Headcount enrolments, all modes. Origin is domicile (to 2021/22) or permanent address (2022/23 on). Dashed lines mark breaks in the HESA series. *Source:* HESA Table 1 and archive publications.

Not all of that fall is the fee change: Brexit also ended Erasmus participation, settled-status rules changed, and Covid hit the 2020 and 2021 cohorts. But the fee change is by far the largest shock, and the only one that varied across universities in a measurable way, which is what allows an elasticity to be estimated rather than a decline described.

3 From the shock to an elasticity

The price an EU student faced in 2016/17 was the home fee: roughly £9,000 for an undergraduate and often less for a master's. The price in 2024/25 is the international fee, which varies enormously across universities, from under £15,000 at many post-1992 institutions to £35,000 and more at the most selective. The size of the price increase therefore differed by university.

I measure the price as realised fee income per full-time student from HESA Finance Table 6

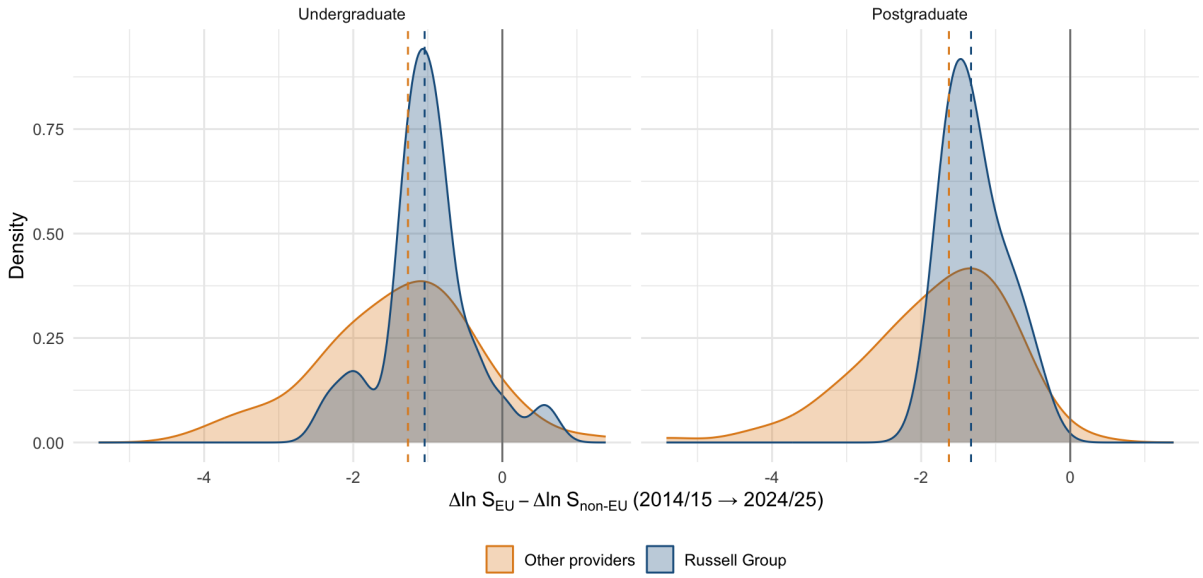
divided by the matching headcount from HESA Table 1, separately for EU and non-EU students in 2016/17 and pooled for non-UK students in 2024/25 (from 2022/23 most providers no longer report the split; after 2021 both groups pay the same fee). Non-EU students at the same university are the comparison group: they faced the same Covid, the same visa environment and the same university, but no change in fee status. For university i and level ℓ (undergraduate or postgraduate) the elasticity is the ratio of two differences-in-differences,

$$\varepsilon_{i\ell} \;=\; \frac{\Delta \ln S_{i\ell}^{EU} - \Delta \ln S_{i\ell}^{\text{non-EU}}}{\Delta \ln F_{i\ell}^{EU} - \Delta \ln F_{i\ell}^{\text{non-EU}}}, \tag{1}$$

where S is enrolment and F the fee, both over 2016/17 to 2024/25. Because both groups pay the same fee in 2024/25, the denominator is simply the university's pre-period overseas/home fee gap, $\ln(\bar{F}_{i\ell,2016}^{\text{non-EU}} / \bar{F}_{i\ell,2016}^{EU})$.

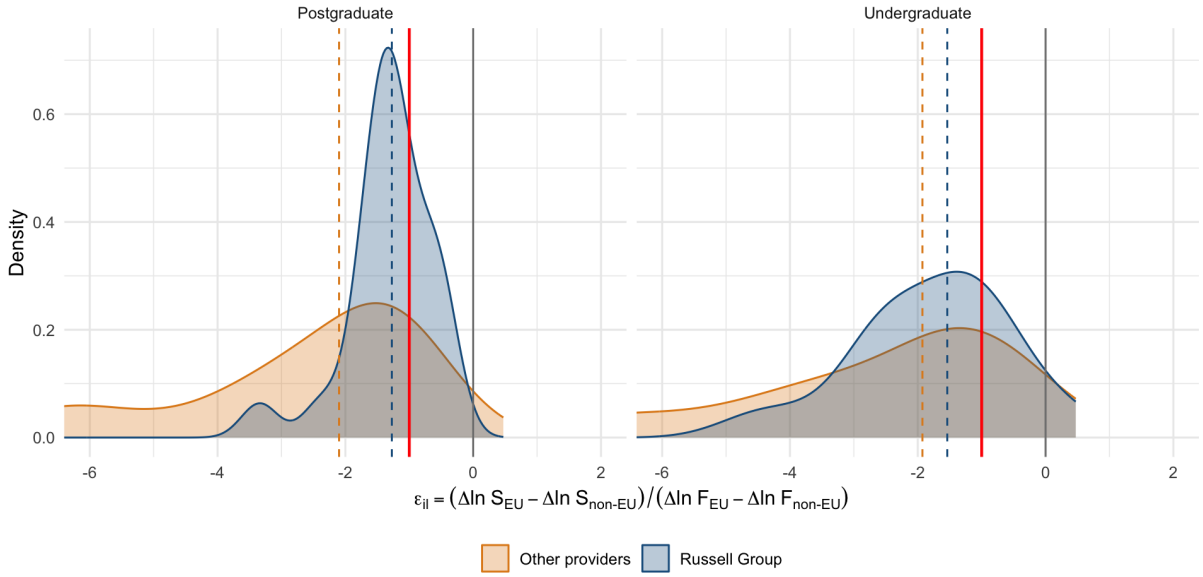
Figure 2 shows the numerator by university, separately for the 24 Russell Group universities and the rest; Figure 3 shows the distribution of the elasticities. The red line marks $\varepsilon = -1$, the point at which a price cut exactly pays for itself.

Figure 2: EU minus non-EU change in log enrolments by provider, 2014/15–2024/25



Notes: One observation per provider × level with at least 50 EU and 50 non-EU enrolments in 2014/15. Dashed lines: group medians. *Source:* HESA Table 1.

Figure 3: Distribution of provider-level price elasticities of EU demand, 2016/17–2024/25



Notes: Provider × level cells with a price gap of at least 0.2 log points; density trimmed to $[-6, 2]$. Dashed lines: group medians; red line: unit elasticity. *Source:* HESA Tables 1, 6, 28; author's calculations.

Table 1: Price and enrolment changes for EU relative to non-EU students, by group, 2016/17–2024/25

Level	Group	Providers	$\Delta \ln S$ DD	$\Delta \ln F$ DD	Ratio of means $\bar{\varepsilon}$	Median $\varepsilon_{i\ell}$	IQR
UG	Russell Group	23	−1.12	0.84	−1.32	−1.54	[−2.46, −0.97]
UG	Other providers	97	−1.58	0.50	−3.15	−1.93	[−4.07, −1.05]
PG	Russell Group	23	−1.18	1.05	−1.13	−1.27	[−1.54, −0.89]
PG	Other providers	79	−1.93	0.68	−2.84	−2.10	[−3.65, −1.28]

Notes: DD = mean across providers of the EU minus non-EU difference in log changes. $\bar{\varepsilon}$ is the ratio of the two group means, which equals the IV (Wald) estimate of the elasticity within the group with EU status as the instrument; the median and IQR are of the provider-level ratios $\varepsilon_{i\ell}$ (cells with a price gap of at least 0.2). *Source:* HESA; author's calculations.

Two things stand out. Demand at Russell Group universities is relatively inelastic and tightly clustered, with a median around −1.3 to −1.5: they roughly doubled the price facing EU students and lost a little more than half of them. Demand everywhere else is far more elastic, with medians around −2 and a long tail of universities that lost almost their entire EU intake despite raising the EU price by less, because their international fees were never far above £9,000 to begin with.

4 What a reversal would do to fee income

If $|\varepsilon| > 1$, cutting the price raises revenue. Table 2 shows what putting EU students back on each university's current home fee would do to income from EU students. The counterfactual is built university by university and uses no estimated elasticity. For provider i and level ℓ, current EU fee income is EU headcount times the pooled non-UK fee per student,

$$R_{i\ell}^{\text{now}} \;=\; \bar{F}_{i\ell,2024}^{\text{non-UK}}\; S_{i\ell,2024}^{EU}. \tag{2}$$

The counterfactual EU headcount is what EU enrolments would be in 2024/25 had they tracked the comparison group at the same provider since 2016/17,

$$S^{cf}_{i\ell} \;=\; S^{EU}_{i\ell,2016}\,\frac{S^{\text{non-EU}}_{i\ell,2024}}{S^{\text{non-EU}}_{i\ell,2016}}, \tag{3}$$

and counterfactual income prices these students at the provider's *current* home fee, measured as 2024/25 fee income per UK student,

$$R^{cf}_{i\ell} \;=\; \bar{F}^{UK}_{i\ell,2024}\,S^{cf}_{i\ell}\,. \tag{4}$$

Group totals in Table 2 sum R^{now} and R^{cf} over the providers in each group.

Three remarks. First, equation (3) is the within-sample reversal of the shock: it is arithmetically identical to applying each provider's own elasticity $\varepsilon_{i\ell}$ to the price change that provider actually experienced, $S^{cf}_{i\ell} = S^{EU}_{i\ell,2024}\exp(-\varepsilon_{i\ell}\,\mathrm{DD}_{P,i\ell})$, so it is a provider-specific reversal rather than one based on the group elasticity. Second, the headcount reversal uses 2016/17 as the base year while the price is the 2024/25 home fee; this is deliberate, since the question is what EU students would pay today. Third, because the headcount comes from the comparison group, the counterfactual inherits that group's post-2020 behaviour; the alternative designs in Appendix Table 4 replace the non-EU group in (3) by UK students, or replace (3) by the extrapolated pre-2021 trend of EU enrolments. Applying the estimated elasticities instead to the hypothetical cut from the non-UK to the home fee, $\ln(\bar{F}^{UK}_{i\ell,2024}/\bar{F}^{\text{non-UK}}_{i\ell,2024})$, gives larger gains still, but that cut is at the edge of the range over which the elasticities were estimated, so it is not used here.

Table 2: Counterfactual EU fee income if EU students paid the home fee, 2024/25

Level	Group	EU students 2024/25	UK/non-UK fee ratio	EU income now (£m)	Counterfactual (£m)	Change
UG	Russell Group	14,160	0.34	375	383	+2%
UG	Other providers	15,500	0.48	269	599	+123%
PG	Russell Group	10,840	0.30	298	278	−7%
PG	Other providers	6,780	0.59	109	384	+253%
All		47,280	0.48	1,051	1,644	+56%

Notes: Providers in the elasticity sample with UK and non-UK fee data for 2024/25. Fee income is full-time fee income per head × EU headcount, so indicative rather than accounting data. *Source:* HESA Tables 1, 6; author's calculations.

For the Russell Group the fee increase was close to revenue-neutral, and so would be its reversal: they lost half their EU students but more than doubled the fee on the rest. For the rest of the sector, which is most of it, the 2021 change appears to have *reduced* income from EU students. The robustness checks in the appendix narrow these numbers (Section 5), but not their sign for non-Russell undergraduate provision.

5 Caveats and robustness

Two objections can be raised against the main estimates, and they pull in opposite directions.

The first is that the collapse in EU numbers after 2021 reflects Covid rather than price. The comparison with non-EU students nets out any pandemic effect common to foreign students by construction, and at undergraduate level there is in fact no break in non-EU numbers around 2020/21 to net out: they drift up by a steady 0.1 log points a year. More telling is the timing (Appendix Figure 5): a pandemic shock should be concentrated in 2020/21–2021/22 and unwind, whereas the EU gap relative to both non-EU and UK students widens every year to 2024/25, which is exactly what a permanent fee change produces as each new cohort pays the higher fee and the pre-2021 cohorts graduate out. At postgraduate level non-EU numbers do jump after 2020/21 (the Graduate Route visa), so there the non-EU control overstates the elasticity and the UK-student control is preferable.

The second objection is the mirror image: that universities simply replaced EU students with other foreign or home students, so the fall *relative* to a control group overstates the demand response. Comparing EU numbers with their own 2015/16–2020/21 trend uses no control at all and still finds them 0.6–1.4 log points below their pre-2021 path (Appendix Table 3): the fall is absolute, not merely relative. Any substitution would in any case be a supply response to the same price change and leaves the revenue counterfactual unaffected.

Appendix Tables 3 and 4 report the elasticities and the revenue counterfactual under all four designs (the two control groups and two pre-2021 trend windows). The ranking is robust: in every design Russell Group demand is markedly less elastic than the rest of the sector, and undergraduate demand outside the Russell Group is price-elastic ($|\varepsilon| > 1$). The levels are not: the non-EU comparison gives the largest elasticities and the UK and trend designs the smallest, with the Russell Group slightly below unit elasticity there. For revenue this means that the Russell Group would *lose* from a reversal under every alternative design (0 to −40%); non-Russell undergraduate income would rise substantially under all four (+40% to +140%); non-Russell postgraduate income would rise modestly under the alternatives (+10% to +50%) rather than tripling; and the sector total ranges from about −5% (UK control) to +56% (main design). The gains in Table 2 are therefore the upper end of a range whose lower end is roughly revenue-neutral for the sector as a whole.

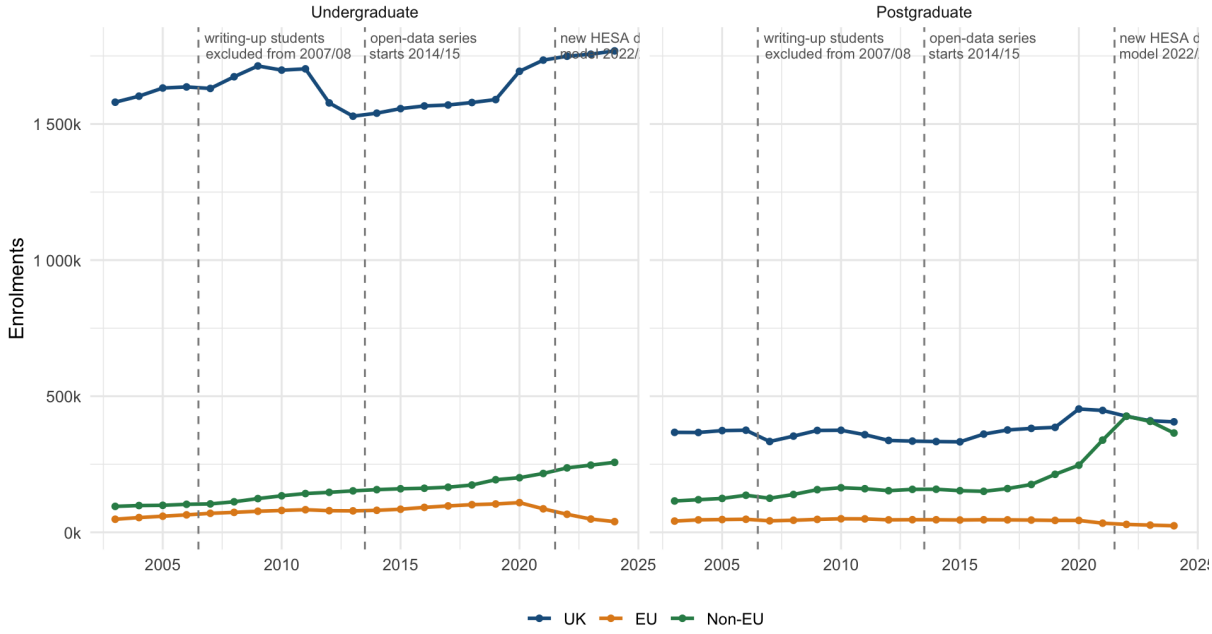
Further limitations: the fee measure is realised income per head and therefore a cohort mixture; if Russell Group universities discounted EU students after 2021 through scholarships, their true price change is smaller and their elasticity even less negative, which strengthens the contrast between groups. The counterfactual ignores capacity constraints. And "home fee" in the EU's proposal may or may not come with access to tuition-fee loans, which matters for take-up.

None of this changes the central point. The numbers quoted as the cost of the EU's demand value the status quo at current enrolment and ignore the demand response entirely. The evidence from 2021 is that the response is large: for the sector as a whole, reversing the fee increase would be somewhere between roughly revenue-neutral and a gain of half as much again, and the "£580m bill" is at best the upper bound of a cost that most designs put at zero or below. What

is not in doubt is the distribution: the fee increase was a transfer towards the handful of elite institutions for which demand is least elastic, and a reversal would reverse it. Those institutions have the most to lose, and the loudest voice in the debate.

A Enrolment levels

Figure 4: Enrolments at UK HE providers by origin and level, 2003/04–2024/25



Notes: Headcount enrolments, all modes. Origin is domicile (to 2021/22) or permanent address (2022/23 on). Dashed lines mark series breaks. *Source:* HESA Table 1 and archive publications.

B Robustness of the elasticities

Table 3: EU demand elasticities under four designs, 2016/17–2024/25

Design	Group	Ratio of means $\bar{\varepsilon}$		Median $\varepsilon_{i\ell}$	
		UG	PG	UG	PG
(1) vs non-EU students (main)	Russell Group	−1.32	−1.13	−1.54	−1.27
	Other providers	−1.90	−2.26	−1.93	−2.10
(2) vs UK students	Russell Group	−0.75	−0.74	−0.79	−0.71
	Other providers	−1.48	−1.21	−2.02	−1.17
(3) vs own trend 2015/16–2020/21	Russell Group	−0.89	−0.45	−0.99	−0.46
	Other providers	−1.52	−0.75	−1.68	−0.73
(4) vs own trend 2014/15–2019/20	Russell Group	−0.99	−0.49	−1.05	−0.49
	Other providers	−1.60	−0.75	−1.71	−0.81

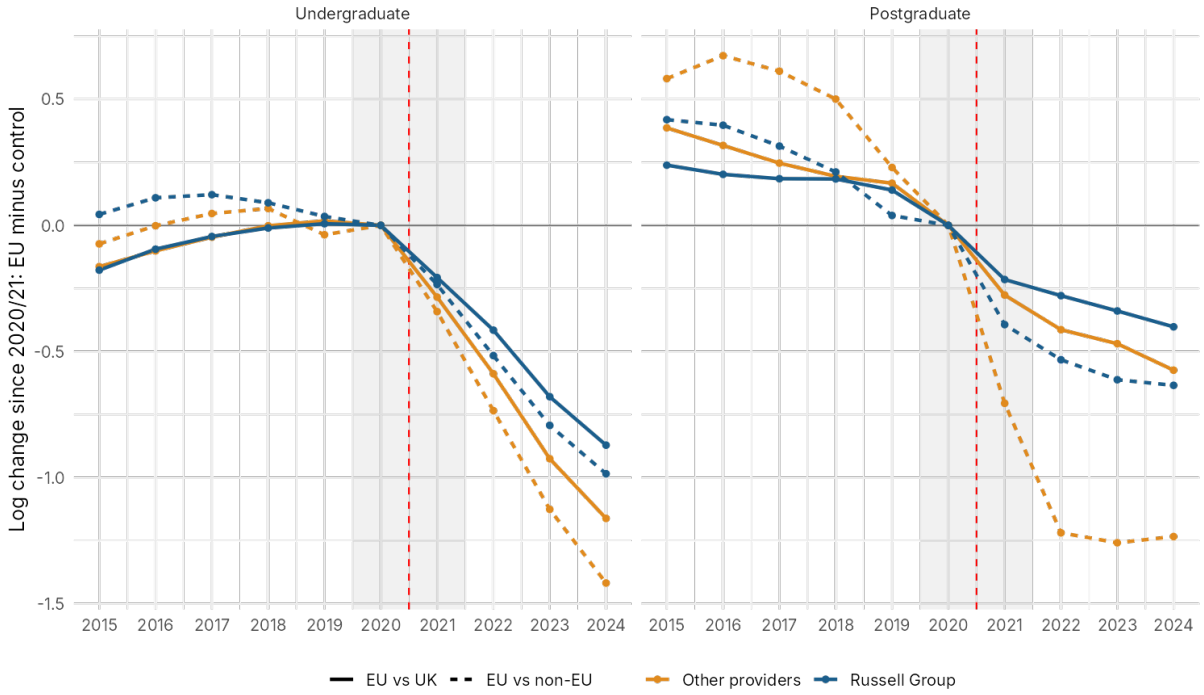
Notes: All designs use provider × level cells with a price change of at least 0.2 log points; $\bar{\varepsilon}$ is the ratio of group means on that sample, so for design (1) it differs slightly from the all-cell value in Table 1. (2): enrolment DD is EU minus UK students at the same provider; price DD is the EU fee change minus the UK fee change (UK fee income per head rose by about 0.1 log points). (3)–(4): gap between actual 2024/25 EU enrolments and a log-linear trend fitted over the stated years, divided by the EU fee change alone; requires at least 30 EU students in every trend year. *Source:* HESA Tables 1, 6; author's calculations.

Table 4: EU fee income if EU students paid the home fee, under each design (2024/25)

Design	Group	EU students now	EU students, counterfactual	Income now (£m)	Income, cf (£m)	Change
(1) vs non-EU	Russell Group, UG	14,160	46,350	375	383	+2%
	Russell Group, PG	10,840	32,230	298	278	−7%
	Other providers, UG	15,500	79,060	269	599	+123%
	Other providers, PG	6,780	47,480	109	384	+253%
	All	47,280	205,120	1,051	1,644	+**56**%
(2) vs UK	Russell Group, UG	14,160	31,180	375	259	−31%
	Russell Group, PG	10,840	20,620	298	183	−39%
	Other providers, UG	15,930	55,050	299	420	+41%
	Other providers, PG	5,920	16,560	98	150	+52%
	All	46,850	123,410	1,071	1,012	−**5**%
(3) trend 15/16–20/21	Russell Group, UG	14,160	40,900	375	353	−6%
	Russell Group, PG	12,100	19,810	332	201	−40%
	Other providers, UG	16,200	84,190	303	681	+124%
	Other providers, PG	8,260	16,790	146	160	+10%
	All	50,720	161,690	1,157	1,395	+**21**%
(4) trend 14/15–19/20	Russell Group, UG	14,160	46,270	375	403	+7%
	Russell Group, PG	12,100	20,800	332	202	−39%
	Other providers, UG	16,200	91,280	303	735	+142%
	Other providers, PG	8,220	17,660	145	163	+12%
	All	50,680	176,010	1,156	1,504	+**30**%

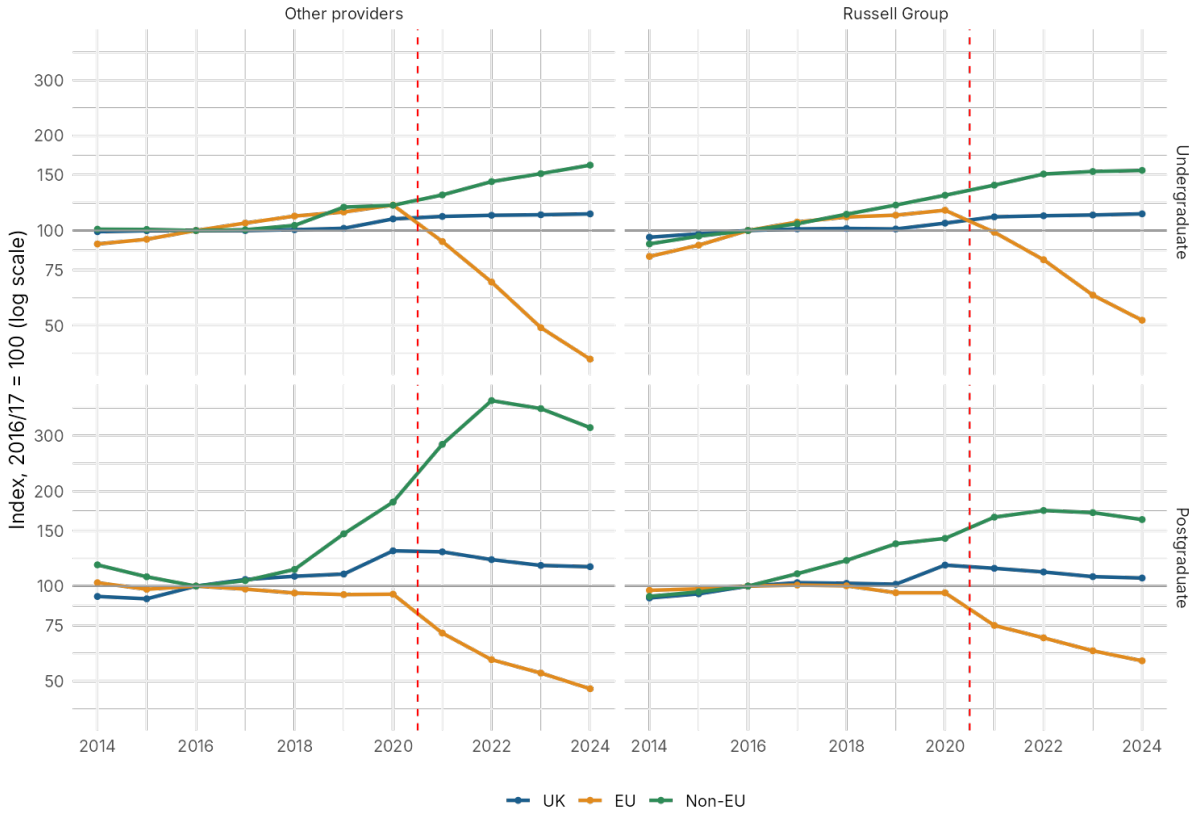
Notes: Counterfactual EU headcount: (1)–(2) EU numbers tracking the control group at the same provider from 2016/17; (3)–(4) the fitted pre-2021 trend extrapolated to 2024/25. Priced at the provider's 2024/25 fee income per UK student; "now" is EU headcount × pooled non-UK fee per student. Samples differ by design (cells with a price change of at least 0.2 and UK fee data for 2024/25). *Source:* HESA Tables 1, 6; author's calculations.

Figure 5: EU enrolments relative to the control group, by year (log difference from 2020/21)



Notes: Aggregates over providers in each group. Shaded band: the two Covid-affected academic years; red dashed line: EU students lose home-fee status for entrants from 2021/22. Pre-2020 the undergraduate gaps are flat (parallel trends); at postgraduate level the non-EU control is not parallel before 2020, so the UK control is preferable there. *Source:* HESA Table 1.

Figure 6: Enrolments by origin, Russell Group vs other providers, index 2016/17 = 100 (log scale)



Notes: Aggregates over providers in each group. Red dashed line: EU students lose home-fee status for entrants from 2021/22. *Source:* HESA Table 1.

Figure 6 explains why the revenue counterfactual in Table 4 is least favourable under the UK-student design. UK enrolments are essentially flat over the period (index 106–113 in 2024/25), so a counterfactual in which EU numbers track them allows little recovery, whereas non-EU enrolments reach 155–160 at undergraduate and 163–318 at postgraduate level. The figure also shows that at undergraduate level EU and non-EU enrolments moved together almost exactly before 2021 – both at 120 in 2020/21, in both groups – which supports the use of non-EU students as the control at that level, and implies that the UK benchmark, against which EU demand was growing faster before the fee change, understates the counterfactual rather than overstating it. There is a further reason to regard the UK design as a lower bound. If universities responded to the post-2020 surge in non-EU demand by admitting more high-fee international students at the expense of home students, UK enrolments are themselves depressed by that substitution; the postgraduate panel is consistent with this, with UK numbers falling after 2020/21 (index 129 to 115 at other providers, 117 to 106 at the Russell Group) while non-EU numbers boom. A counterfactual in which EU numbers track UK numbers then inherits that crowding-out and biases the revenue effect of a reversal downwards.

Data and code

HESA open data (Table 1, student enrolments by provider; Finance Table 6, tuition-fee income by provider) and the HESA "Students in Higher Education" archive (2003/04–2013/14) for the pre-2014 series. Fees are in sterling throughout; no exchange-rate or PPP adjustment enters the estimates in this paper. The full pipeline, which also contains a country-level extension using HESA Table 28 with World Bank PPP exchange rates, and additional figures are in `student_numbers_pipeline.Rmd` in the project repository.