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Degrees of demand: Price elasticity in Higher Education

Claire Crawford
IFS & UCL

Robbie Maris
UCL

Fabien Petit
UB & UCL

Gill Wyness
LSE & UCL

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Highlights

- International undergraduate students are relatively insensitive to tuition fee increases.
- Postgraduate students are substantially more price sensitive than undergraduates, though demand is still relatively inelastic – a 1% increase in fees reducing applications by 0.27%, and enrolments by 0.13%.
- For some countries, such as India and Turkey, students may take higher fees as a sign of a better quality education – students in these countries are more likely to apply in response to a fee increase.
- On the other hand, students from Europe and the Americas tend to respond negatively to fee increases.
- There is also some variation in elasticity according to the subject students study. In particular, students choosing engineering and other STEM disciplines are fairly insenstive to price. This could be because of the high returns associated with these subjects.
- Competittors tuition fees are relatively unimportant at application stage, but students do respond to them at enrolment, when they are choosing which offer to take up.

Why does this matter?

Tuition fees have become the financial backbone of higher education (HE) institutions. The stability of universities, therefore, depends critically on how student demand responds to changes in tuition fees.

Degrees of Demand: Price Elasticity in Higher Education

Claire Crawford[*] Robbie Maris[†] Fabien Petit[‡] Gill Wyness[§]

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Abstract

Tuition fees are a critical source of revenue for universities, yet how student demand responds to changes in fees remains poorly understood. Using administrative data from one of the largest UK universities between 2019 and 2025, we estimate the price elasticity of demand for both undergraduate and postgraduate degrees. Our analysis distinguishes between the application and enrolment stages, accounts for persistence in demand across cohorts, and incorporates fee data from competitor institutions to estimate cross-price elasticities. We find that postgraduate students are substantially more price-sensitive than undergraduates, with estimated elasticities of −0.27 for applications and −0.13 for enrolments. Undergraduate demand is largely price-inelastic. Elasticities vary sharply across countries: applicants from emerging markets such as India, Indonesia, and Turkey display positive application elasticities—consistent with tuition functioning as a signal of quality—while students from Europe and the Americas exhibit conventional price sensitivity. Subject-level variation is more muted: demand for engineering and other STEM disciplines is effectively inelastic, consistent with high expected earnings, while other subjects display stronger negative elasticities. We also document strong persistence in demand across cohorts within countries, suggesting peer-driven information spillovers. Finally, we find limited responsiveness to competitors' tuition at the application stage but positive cross-price elasticity at enrolment, indicating substitution effects once offers are received. These results provide the most comprehensive and recent evidence on tuition responsiveness in UK higher education, highlighting how price sensitivity differs across stages, markets, and subjects.

Keywords: Higher Education; Tuition Fees; Price Elasticity; International Students; Cross-Price Elasticity.
JEL Codes: I22, I23, D12, L11.

[*]Institute for Fiscal Studies and UCL CEPEO. Email: claire.crawford@ucl.ac.uk.
[†]UCL CEPEO. Email: robert.maris.23@ucl.ac.uk.
[‡]University of Barcelona and UCL CEPEO. Email: f.petit@ub.edu. Website: fabienpetit.com.
[§]Centre for Economic Performance, LSE and UCL CEPEO. Email: g.wyness@ucl.ac.uk.

1 Introduction

Tuition fees have become the financial backbone of higher education (HE) institutions. In the UK, they now account for over half of total university income, and in the US, they represent roughly 40% of educational revenues.[1] The stability of universities, therefore, depends critically on how student demand responds to changes in tuition fees.

At the same time, the HE sector faces severe and persistent financial strain. Domestic tuition fees in the UK have been capped for more than a decade, eroding their real value by about 30% since 2012 (Wyness and Murphy, 2024; Russell Group, 2025). Rising inflation, stagnant public funding, and heightened post-pandemic costs have pushed many universities into structural deficits (Universities UK, 2025; Mallapaty, 2025). Institutions have responded by expanding recruitment of international students, whose tuition fees are uncapped and increasingly vital to financial viability (García et al., 2023). Yet, these same fees are set in markets where demand responsiveness is poorly understood, creating substantial uncertainty over the fiscal consequences of fee adjustments.

This tension between financial necessity and uncertain demand lies at the core of universities pricing decisions. Raising tuition may boost per-student revenue but risk reducing enrolments enough to offset the gain. The magnitude and distribution of these effects—across subjects, levels of study, and countries of origin—remain largely unknown. Existing studies have focused mainly on enrolment elasticities, often in US contexts or pre-2018 UK contexts (Soo and Elliott, 2010; Dearden et al., 2011; Denning, 2017; Millea and Orozco-Aleman, 2017; Sá, 2019; Havranek et al., 2018). Yet, they provide limited evidence on elasticities at the application stage, international heterogeneity, and substitution across institutions.

Understanding the elasticity of demand with respect to tuition fees is therefore central to strategic planning in HE. Accurate and disaggregated estimates can inform sustainable pricing strategies, support diversification of income sources, and identify which markets and programmes are most sensitive to tuition fee changes.

In this paper, we estimate the price sensitivity of undergraduate (UG) and postgraduate (PG) students at one of the largest universities in the UK. Building on previous work, we estimate these elasticities by students' country of origin, the subject they are applying to, and at both application and enrolment stages. This allows us to capture differential impacts across the application life cycle. We also estimate cross-price elasticities using pricing data from competitor institutions and document the presence of persistence in demand reflecting information-sharing channels that transmit application knowledge across cohorts of students.

[1] In the UK, receipts from tuition fees grew by 77% between 2015 and 2024 (from £15.5 billion to £27.4 billion), rising from 46% to 52% of total income for UK universities (HESA, 2025). In the US, tuition fees made up around 40% of public universities educational revenues in 2024 (SHEEO, 2025).

We use data from the Sector Fee Database, which contains comprehensive information on tuition fees for all UG and PG courses across UK universities. We combined this with internal data on applications, offers, and enrolments between 2019/20 and 2024/25. This data is disaggregated by course and students' country of domicile. We then estimate a series of fixed effects regression models to estimate the price elasticity of students at one of the largest UK-based universities (herein referred to as the University). Our approach accounts for a range of time-varying confounders, including country-level shocks, changes in subject popularity, and persistence in demand that reflects information-sharing between cohorts of applicants within a country.

Our work reveals several findings. First, postgraduate students exhibit substantially greater price sensitivity than undergraduates, though responsiveness declines between the application and enrolment stages. Among international undergraduates, demand is effectively price-inelastic: tuition changes have no measurable effect on either applications or enrolments. We focus on international students, as domestic tuition fees are capped and therefore provide no identifying variation. In contrast, postgraduate demand responds systematically to price. The estimated aggregate elasticities are 0.27 for applications and 0.13 for enrolments, implying that a 10% increase in tuition fees reduces applications by roughly 2.7% and enrolments by 1.3%. Tuition fees play a stronger role in shaping application choices than in final enrolment outcomes, where other constraints may dampen price sensitivity.

Second, we find that price elasticities vary sharply across countries of origin. For several emerging economies—particularly India, Indonesia, Turkey, the Middle East, and the Rest of Asia—undergraduate application elasticities are positive, suggesting that higher tuition fees are perceived as signals of program quality or institutional prestige (akin to a Veblen good; see Abbott and Leslie, 2004; Eaton and Eswaran, 2009). However, for these same groups, the corresponding enrolment elasticities are negative or statistically insignificant, indicating that while higher prices attract additional applicants, they do not translate into enrolment once offers are received. In contrast, students from mature higher education markets, including Europe and the Americas, exhibit conventional demand behaviour: higher tuition fees consistently reduce both applications and enrolments.

Third, subject-specific estimates show more homogeneity in price sensitivity across fields. Among postgraduates, tuition elasticities are uniformly negative, with the exception of engineering and other STEM disciplines, where demand is effectively inelastic. This is consistent with higher expected earnings. At the undergraduate level, most subjects display similarly inelastic demand, though computing stands out as the only field with a statistically significant negative elasticity, suggesting that applicants in this area are more responsive to tuition changes.

Fourth, we find that demand persistence across cohorts varies markedly by country of origin. Applications from China, India, Indonesia, Turkey, and the United States exhibit the strongest persistence in demand, consistent with dense peer networks, institutional familiarity, and information-sharing channels that transmit application knowledge across cohorts. At the enrolment stage, spillovers remain most pronounced for China, indicating sustained network effects beyond initial application decisions. By contrast, students from Europe display much weaker persistence, suggesting more individualised decision-making and limited reliance on peer-based information flows.

Fifth, we find that students exhibit limited responsiveness to competitors' tuition fees at the application stage, indicating that initial application choices are largely independent of relative pricing across institutions. At the enrolment stage, however, we estimate a positive cross-price elasticity of 0.10 for postgraduate students, implying that higher competitor fees modestly increase enrolments at the focal University—consistent with substitution effects once offers are received. Cross-price elasticities vary across individual competitors, suggesting asymmetric competitive relationships in which some institutions function as closer substitutes while others occupy distinct market segments.

Our paper contributes to several strands of the literature on the price elasticity of demand for HE. Most existing research estimates the responsiveness of student enrolments to tuition fees. A comprehensive meta-analysis by Havranek et al. (2018) synthesised 443 estimates from 43 studies and found that demand for HE is generally inelastic, with a mean price elasticity of 0.10, and in many cases indistinguishable from zero after correcting for publication bias. This finding implies that higher education demand tends to be largely unresponsive to price changes. However, the meta-analysis predominantly covers U.S. studies and focuses on enrolments only, leaving gaps in evidence for other contexts and stages of the application process.

Since Havranek et al. (2018), relatively few studies have updated elasticity estimates using modern or non-US data. Exceptions include Denning (2017), Millea and Orozco-Aleman (2017), and Sá (2019), who find elasticities between 0.10 and 0.40 using quasi-experimental approaches in the US and UK contexts. UK-specific analyses by Dearden et al. (2011) and Soo and Elliott (2010) similarly suggest that enrolment elasticities range between 0 and 0.14, although some recent estimates have been higher (Public First, 2025)[2]. Collectively, however, this literature points to limited price responsiveness overall, but almost all studies are confined to enrolments rather than applications.

Our study makes several contributions to this literature, including to the most recent UK evidence from Public First (2025). First, we conduct a full-cycle analysis of the HE admissions process by estimating tuition fee elasticities for both applications and enrolments. While

[2]Public First estimates are based on earlier work by London Economics (2021)

most previous research has focused on one stage or the other, understanding the full decision sequence—from initial interest to final enrolment—is essential for assessing how tuition fee changes propagate through the admissions process. Looking only at enrolments also mixes together student preferences with universities own admissions limits and capacity decisions.

Second, our analysis takes into account that demand can vary by country of origin, subject area, and year. Although a few papers have examined differences by country (e.g. Public First 2025), subject (e.g., Sá 2019) or institution type (e.g., Havranek et al. 2018), almost none consider cross-country variation in price sensitivity, nor the interaction between geographic origin and subject choice. We find substantial variation across these dimensions, showing that some student groups—particularly from emerging markets—may even treat higher fees as signals of institutional prestige, while others respond in the conventional, price-sensitive direction. Our study effectively allows for factors that differ by university, subject, year and market (e.g., reputation, marketing, policy changes), rather than assuming that unobserved factors affecting demand move broadly across the sector.

Third, we extend the literature by estimating cross-price elasticities using competitor institutions' tuition data. This allows us to measure substitution effects in HE markets, a dimension of competition that is rarely examined empirically despite its relevance for pricing and recruitment strategies. We find that students are largely unresponsive to competitor prices at the application stage but exhibit positive cross-price elasticity at enrolment, suggesting substitution once offers are in hand.

Fourth, our analysis provides up-to-date evidence on price responsiveness in the post-Brexit and post-COVID era, using unique administrative data from a large UK university covering 2019–2024. Most prior studies rely on data before 2018 or on US settings, making our findings among the most recent and relevant for current higher education policy and financial planning.

Finally, we contribute methodologically by accounting for persistence in demand arising from peer networks and prior cohorts within countries—an effect rarely modelled in elasticity studies despite its potential to bias estimates.

Together, these contributions position our paper as the first to deliver a comprehensive, disaggregated, and contemporary analysis of tuition fee responsiveness across multiple student groups, subjects, and stages of the HE admissions process.

This paper is organized as follows. We start by presenting the data in Section 2 and our empirical approach in Section 3. Section 4 shows and discusses the results and Section 5 concludes.

2 Data

2.1 Tuition Fees

Data on tuition fees come from the Courses 360 database collected and maintained by Times Higher Education (Times Higher Education, 2024). This database provides comprehensive information on tuition fees for *all* undergraduate and postgraduate programs in the UK from the academic years 2019/20 to 2024/25, except for the year 2021/22 because of the COVID-19 pandemic. However, due to the particular context of this academic year, with the onset of the COVID-19 pandemic, many factors unrelated to prices may affect HE applications and enrolments. Having no data for this year is therefore not of great concern for the paper.

These data include details about the program (i.e., UCAS code, award, title, HESA, JACS, and CAH subject codes), the name of the institution that proposes this program, and the tuition fees (for both local and international students). We focus on the data for the University and six main strategic competitors.

2.2 Applications, Offers, and Enrolments

We also have information on the number of applications, offers, and enrolments for each program and country of origin over the academic years ranging from 2019/20 to 2024/25 for this university. Raw applications indicate the effective demand, capturing all students who choose to apply to the program. Enrolments, however, can be influenced by selection, due to grade thresholds, and students' final decisions, based on their available options. Using our measure of offers, which accounts for selection from the supply side (i.e., from the University), we can estimate the elasticity for enrolments *conditional* on offers. That is, how much does a change in tuition fees affect the offer acceptance decision?

2.3 Tuition Loans and the Effective Price of Study in the UK

An important institutional feature of the UK higher education system is that domestic students are typically not required to pay tuition fees upfront. Instead, tuition charges are financed through government-backed income-contingent loans, which are repaid only after graduation and conditional on earnings. Consequently, the nominal tuition fee paid by domestic students does not represent the effective marginal price at the time of enrolment. Rather, it functions more akin to a deferred income-linked tax liability (see Dearden et al., 2008; Dearden et al., 2014).

This distinction has two implications for the interpretation of price elasticity estimates.

First, the presence of income-contingent repayment substantially attenuates students perceived cost of study. Since repayment occurs only above a defined income threshold and balances are written off after a fixed period, the behavioural response to changes in the sticker price may be weak or even absent among domestic undergraduates. Second, the introduction of postgraduate loan schemesallowing UK students to borrow for tuition at the masters levelextends this dynamic to parts of the postgraduate market, again reducing the salience of upfront tuition changes.

For our purposes, these institutional features primarily affect domestic students, while international studentswho form the analytical focus of this paperare ineligible for UK government loans. As a result, any attenuation in price responsiveness due to the loan system is captured by country-of-domicile fixed effects, which absorb persistent differences between domestic and international students. Furthermore, changes in loan conditions over time, such as adjustments to repayment thresholds or interest rates, are captured by the country-group-by-year fixed effects, $d_{C(c)t}$, since the UK constitutes a single country group in our classification. Consequently, our estimated elasticities for international students are unaffected by this institutional arrangement, while the inclusion of these fixed effects ensures that variation in the UK loan system does not confound estimates of tuition responsiveness across countries.

2.4 Cost of Living and Subject Ranking

There are potential sources of confounding that could explain both changes in tuition fees and changes in demand, thereby biasing our estimates.

First, changes in the cost of living in the UK can influence the decision of students to apply and enrol. This is even more important for international students who may come from lower-income countries. The omitted variable bias can be introduced by an increase in the cost of living that would incentivize universities to raise their tuition fees to keep up with inflation, while decreasing demand since it becomes relatively more costly to live and study in the UK. To account for this, we control for the cost of living measured as the ratio between the price level index in their country of origin relative to the UK one.[3]

The second confounding factor may be the ranking of the university, either general or in a specific subject, relative to its competitors. Any increase in the ranking would increase the value-for-money of the subject, which may increase the demand. However, this increase is unrelated to changes in tuition fees and would only reflect applicants' sensitivity to the ranking of universities and subjects when applying. To account for this, we control for the ranking of the university in the subject using the QS World Ranking in the previous year, that is, when students

[3]We use purchasing power parity data from the World Bank for this exercise (Bank, 2025).

decide to apply and enrol.

3 Empirical Methodology

In this section, we describe our empirical strategy for estimating the price elasticity of students. Our strategy relies on variation in applications and enrolments over time and across subjects and countries of domicile. We start by presenting our baseline empirical specification. We then look at the heterogeneity in elasticities by subject areas and countries of domicile. Finally, we estimate cross-price elasticities with respect to the main competitors.

3.1 Baseline Specification

We estimate the elasticity of students to tuition fees, for UG and PG separately, with the following linear regression model:

$$\text{IHS}(y_{sct}) = \alpha + \beta \log p_{sct} + \gamma \text{IHS}(y_{sc,t-1}) + d_s + d_c + d_{S(s)t} + d_{C(c)t} + \varepsilon_{sct}, \tag{1}$$

where y_{sct} and $y_{sc,t-1}$ are the number of first-year applications/enrolments for subject s from country c in year t and $t-1$, respectively; p_{sct} are the tuition fees, d are fixed effects for subject s, country c and country-specific time shocks $d_{S(s)t}$, and ε_{sct} is the error term.

When estimating Equation (1) with enrolments as the dependent variable, we additionally control for the number of offers issued in subject s to applicants from country c in year t. This adjustment isolates the enrolment elasticity with respect to tuition fees conditional on the supply of offers, ensuring that estimated responses reflect students' take-up decisions rather than institutional admission behaviour.

The parameter of interest, β, represents the price elasticity of demand for the University's degrees. The estimated coefficient, $\widehat{\beta}$, measures the percentage change in first-year applications—or, when the outcome is enrolments, the conditional enrolment response—associated with a 1 percent increase in tuition fees. All elasticities are estimated separately for undergraduate and postgraduate qualifications to allow for differences in price sensitivity across study levels.

We apply the inverse hyperbolic sine (IHS) transformation to all count variables, including y_{sct}. Several subject-country-year combinations record zero applications or enrolments, representing meaningful observations rather than missing data. Using logarithms would exclude these cases; the IHS transformation, defined as

$$\text{IHS}(y_{sct}) = \ln\left(y_{sct} + \sqrt{y_{sct}^2 + 1}\right)$$

preserves them while approximating the log transformation for positive values. This approach is standard in empirical work with zero-valued outcomes and allows consistent interpretation of coefficients on transformed variables as semi-elasticities (Burbidge et al., 1988; Friedline et al., 2015).

3.2 Identification

The baseline specification in Equation (1) addresses several sources of potential bias that could confound the estimated relationship between tuition fees and student demand. We outline how the included controls and fixed effects mitigate these concerns and clarify the identifying variation that remains.

3.2.1 Persistence in Demand

A key feature of international higher education markets is the persistence of subject-country demand across application cycles. This persistence reflects information transmission and reputational dynamics operating through peer networks within countries. When earlier cohorts of students apply to or enrol in a given subject, subsequent applicants from the same country may benefit from shared knowledge about entry requirements, admissions processes, or perceived returns, leading to sustained demand over time.

To capture this dynamic, we include the lagged dependent variable in the baseline specification. The coefficient on this term, γ, measures the degree of persistence in subject-country demand, summarizing the extent to which current applications or enrolments respond to previous cohort behaviour. We interpret γ as reflecting information-sharing and reputational mechanisms that generate autocorrelation in demand. This interpretation follows Soo and Elliott (2010), who argue that such persistence captures the influence of word-of-mouth recommendations and accumulated institutional familiarity among overseas applicants.

In the heterogeneity analysis, we allow persistence to vary systematically by interacting the lagged dependent variable with grouped country-of-origin fixed effects, $d_{C(s)t}$, and subject-area fixed effects, $d_{S(c)t}$. This approach permits γ to differ across markets and disciplines, recognising that the intensity of informational diffusion and network effects is unlikely to be uniform across countries or fields of study.

3.2.2 Full Cycle Approach to Enrolments

When estimating enrolment elasticities, we condition on the number of offers to account for the full application–enrolment cycle. Specifically, the specification includes the number of first-year offers in each subject-country-year cell as a control variable. Variation in offers across

subjects or countries affects the size of the potential enrolment pool and, if unaccounted for, would mechanically generate spurious changes in enrolments. Controlling for offers, therefore, isolates the behavioural response of admitted students to tuition fees. Under this specification, the coefficient β captures the effect of tuition fees on the enrolment decision. This parameter is of direct relevance for institutions seeking to understand conversion from offers to enrolments.

3.2.3 Fixed Effects

The baseline specification incorporates several sets of fixed effects to absorb shocks and persistent differences that could otherwise confound the estimated elasticity of student demand with respect to tuition fees.

First, *subject fixed effects*, d_s, capture time-invariant differences in the average attractiveness of subjects. Some disciplines, such as medicine, consistently command higher demand due to stable differentials in expected earnings or prestige relative to other fields, such as the arts.

Second, *country-of-origin fixed effects*, d_c, control for persistent cross-country differences in student demand arising from geographic, cultural, or linguistic factors. For instance, greater physical distance raises travel and information costs, while English-speaking origin countries face negligible language barriers, effectively lowering the implicit cost of study.

Third, *subject-area–time fixed effects*, $d_{S(s)t}$, absorb time-varying shocks specific to subject areas that influence their relative appeal. The emergence of new technologies, such as artificial intelligence, may elevate interest in data science and computing, while heightened awareness of climate change or politically salient events may increase applications to environmental or political science subjects.

Fourth, *grouped-country-of-origin–time fixed effects*, $d_{C(c)t}$, capture regional shocks and temporal trends in demand. Grouping countries of origin, rather than using individual country fixed effects, avoids overfitting in cases where few students apply from smaller countries, which would leave variation explained primarily by larger countries. A relevant example of the importance of these fixed effects is the demand from the European Union, which has been affected by Brexit and its implementation. Brexit has increased the effective cost of studying in the UK, largely due to the reintroduction of student visas. These changes can explain fluctuations in demand that are unrelated to tuition fees.

3.2.4 Other Controls

Differences in perceived academic quality across universities could influence application behaviour independently of tuition fees. In practice, time-varying subject and country fixed ef-

fects absorb changes in relative teaching or research quality, such as movements in international university rankings, ensuring that variation in demand is not spuriously attributed to price.

We also consider differences in the cost of living across source countries, which may affect foreign students decisions to apply or enrol. To account for this, we include the World Banks Purchasing Power Parity (PPP) index as a control in robustness checks. index as a control variable. The inclusion of PPP does not alter the estimated elasticities, and because it restricts the sample to countries with complete data, it is excluded from the preferred specification.

3.3 Heterogeneity Analysis

We examine how price elasticities vary across subject areas and countries of origin. For subject-level heterogeneity, we estimate Equation (1) with interaction terms between log tuition fees and subject-area indicators, allowing the elasticity parameter β to differ across subject areas. As discussed earlier, we also interact the lagged dependent variable with subject-area indicators to capture variation in the persistence of demand across fields of study.

For country-level heterogeneity, we interact both log tuition fees and the lagged outcome variable with indicators for grouped countries of origin. This specification allows the estimated elasticities to reflect systematic differences in price sensitivity and demand dynamics across regional student markets.

3.4 Main Competitors

In the final stage of the analysis, we estimate cross-price elasticities with respect to tuition fees charged by the Universitys main competitors. We identify six such institutions, denoted by the set U.

We estimate the following regression:

$$\text{IHS}(y_{stc}) = \alpha + \gamma \text{IHS}(y_{sc,t-1}) + \beta \log p_{stc} + \delta_u \log p^u_{stc} + \mathbf{D} + \varepsilon_{sct}, \tag{2}$$

where y_{stc} is the total number of first-year applications in subject s from country of origin c in year t, p_{stc} is the University's tuition fee, p^u_{stc} is the corresponding tuition fee charged by competitor $u \in U$, $\mathbf{D}$ includes the same set of fixed effects as in the baseline specification, and ε_{sc} is the error term.

The coefficient of interest, δ_u, measures the cross-price elasticity of demand for the universitys programs with respect to the fees of competitor u. The estimated $\widehat{\delta}_u$ represents the percentage change in the number of first-year applications (or enrolments) at the University

following a 1% increase in tuition fees of competitor u.

In the main specification, we summarize competitors' fees as an average:

$$p^u_{stc} = \frac{1}{N_U} \sum_{u \in U} p^u_{sct},$$

where N_U is the number of competitor universities. We also estimate separate models for each competitor to allow for heterogeneity in market overlap, since the degree of competition varies by subject offering and international reach.

4 Results

In this section, we report the estimated elasticities of student demand. We start with aggregate price elasticities, then examine heterogeneity across countries of origin and subject areas, including variation of persistence in demand. We then present cross-price elasticities with respect to competitor universities. For all specifications, we report results both with and without the lagged dependent variable; the lagged models constitute our preferred estimates.

4.1 Aggregate Elasticity Estimates

Table 1 reports the estimated aggregate elasticities of applications and enrolments with respect to tuition fees for both undergraduate and postgraduate levels.

At the undergraduate level, tuition fees show a weak positive association with application volumes. In the baseline specification (Column 1), a 1% increase in tuition fees corresponds to a 0.27% rise in applications, though the effect becomes statistically insignificant once lagged applications are included (Column 2), indicating that persistence in prior demand absorbs most of this variation.

For postgraduate applications, the relationship is negative and statistically robust: elasticities of 0.23 and 0.27 (Columns 3–4) imply that higher tuition fees substantially dampen the number of applications.

Turning to enrolments, the price response is again limited at the undergraduate level, with small and statistically insignificant coefficients across models. By contrast, postgraduate enrolments exhibit a stronger and more precisely estimated sensitivity to price. In the preferred specification (Column 4), a 1% increase in tuition fees reduces enrolments by approximately 0.13%, significant at the 1% level.

Overall, the results indicate that postgraduate students are more price sensitive than undergraduates, but that responsiveness diminishes between the application and enrolment stages.

Table 1: Demand Elasticities of Undergraduates and Postgraduates at the Application and Enrolment Stages

	Undergraduate		Postgraduate	
	(1)	(2)	(3)	(4)
Panel A – Applications				
Log Fees	0.269^{**}	0.109	-0.231^{***}	-0.273^{***}
	(0.127)	(0.162)	(0.075)	(0.075)
Lag Applications		0.536^{***}		0.656^{***}
		(0.012)		(0.011)
Num. Obs.	23,399	18,708	29,529	23,846
R^2	0.684	0.723	0.649	0.719
Panel B – Enrolments				
Log Fees	0.050	0.019	-0.071^{*}	-0.131^{***}
	(0.059)	(0.080)	(0.037)	(0.045)
Log Offers	0.369^{***}	0.300^{***}	0.530^{***}	0.451^{***}
	(0.006)	(0.006)	(0.006)	(0.006)
Lag Enrolments		0.193^{***}		0.118^{***}
		(0.012)		(0.008)
Num. Obs.	23,399	18,708	29,529	23,846
R^2	0.637	0.652	0.765	0.756

Notes: All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. HC1 Robust standard errors between parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

At the postgraduate level, the enrolment elasticity is roughly half the magnitude of the application elasticity, suggesting that some initial responsiveness to tuition fees dissipates as students progress through the decision process. This pattern is consistent with the presence of sunk costs or commitment effects once offers are received, implying that price plays a stronger role in shaping application choices than in final enrolment outcomes.

4.2 Elasticity by Country of Domicile

Tables 2 and 3 present heterogeneous tuition fee elasticities by grouped countries of domicile for undergraduate and postgraduate students, respectively. In each table, the second and fourth columns include the lag of the outcome variable, while the third and sixth columns include an interaction between the lag and the corresponding country group to capture variation in demand across markets.

At the undergraduate level (Table 2), students from India, Turkey, Indonesia, and China ex-

Table 2: Undergraduate Demand Elasticities by Country Group

	Applications			Enrolments		
	(1)	(2)	(3)	(4)	(5)	(6)
Log Fees × China	2.384***	0.353	0.047	1.524***	1.108*	0.208
	(0.742)	(0.430)	(0.427)	(0.543)	(0.567)	(0.552)
× European Union	−0.231	−0.143	−0.145	0.032	0.030	0.034
	(0.162)	(0.189)	(0.189)	(0.071)	(0.089)	(0.089)
× India	4.213***	3.925***	3.706***	−0.493*	−0.321	−0.310
	(0.529)	(0.508)	(0.492)	(0.267)	(0.306)	(0.311)
× Indonesia	2.074***	1.758***	1.848***	−0.125	−0.146	−0.064
	(0.405)	(0.457)	(0.485)	(0.176)	(0.172)	(0.177)
× Middle East	1.164***	1.046***	1.043***	−0.015	0.006	0.034
	(0.186)	(0.223)	(0.224)	(0.072)	(0.095)	(0.093)
× Rest of Africa	0.126	−0.096	−0.091	0.081	0.013	0.030
	(0.154)	(0.188)	(0.188)	(0.061)	(0.082)	(0.082)
× Rest of Americas	−0.647***	−0.764***	−0.778***	0.109*	0.055	0.055
	(0.155)	(0.189)	(0.190)	(0.063)	(0.083)	(0.083)
× Rest of Asia	0.781***	0.535***	0.526***	0.029	−0.011	−0.009
	(0.150)	(0.182)	(0.183)	(0.071)	(0.091)	(0.092)
× Rest of Australasia	−0.075	0.235	0.167	0.134	0.097	0.083
	(0.267)	(0.322)	(0.315)	(0.118)	(0.135)	(0.131)
× Rest of Europe	−0.547***	−0.587***	−0.593***	0.008	0.014	0.021
	(0.168)	(0.202)	(0.202)	(0.070)	(0.089)	(0.089)
× Turkey	2.340***	2.392***	2.172***	−0.263	−0.184	−0.168
	(0.451)	(0.441)	(0.429)	(0.211)	(0.245)	(0.242)
× Unknown	−1.134***	−1.221***	−1.209***	−0.061	−0.004	−0.018
	(0.329)	(0.370)	(0.373)	(0.131)	(0.157)	(0.159)
× USA	−0.450	0.086	0.063	−0.285	−0.237	−0.312
	(0.333)	(0.357)	(0.366)	(0.256)	(0.288)	(0.281)
Lag Outcome		✓	✓		✓	✓
Lag Outcome × Country Group			✓			✓
Num. Obs.	23,399	18,708	18,708	23,399	18,708	18,708
R^2	0.690	0.727	0.728	0.639	0.652	0.661

Notes: All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Models in columns (4) to (6) also include the number of offers as a control variable. HC1 Robust standard errors between parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

hibit large and statistically significant positive application elasticities, particularly in the baseline specifications. For instance, a 1% increase in tuition fees is associated with more than a 4% rise in applications from India. Such counterintuitive responses likely reflect signalling effects, where higher prices are interpreted as indicators of program quality or prestige. However,

Table 3: Postgraduate Demand Elasticities by Country Group

	Applications			Enrolments		
	(1)	(2)	(3)	(4)	(5)	(6)
Log Fees × China	−0.285	−0.078	−0.030	−0.188	−0.270	−0.223
	(0.791)	(0.470)	(0.389)	(0.315)	(0.370)	(0.364)
× EU	−0.312***	−0.367***	−0.370***	−0.070*	−0.123***	−0.119***
	(0.072)	(0.075)	(0.075)	(0.036)	(0.043)	(0.043)
× India	0.381	0.280	0.258	0.005	−0.044	−0.030
	(0.304)	(0.274)	(0.270)	(0.160)	(0.172)	(0.172)
× Indonesia	−0.345	−0.487*	−0.465*	0.120	0.069	0.075
	(0.276)	(0.259)	(0.251)	(0.131)	(0.147)	(0.146)
× Middle East	0.555***	0.397***	0.416***	−0.075	−0.119**	−0.106*
	(0.124)	(0.127)	(0.126)	(0.048)	(0.059)	(0.059)
× Rest of Africa	−0.088	−0.147	−0.152	−0.046	−0.104**	−0.107**
	(0.102)	(0.107)	(0.107)	(0.044)	(0.052)	(0.051)
× Rest of Americas	−0.403***	−0.484***	−0.475***	−0.039	−0.077	−0.094*
	(0.096)	(0.099)	(0.098)	(0.044)	(0.052)	(0.051)
× Rest of Asia	−0.091	−0.199**	−0.176*	−0.035	−0.106**	−0.100*
	(0.097)	(0.099)	(0.099)	(0.044)	(0.052)	(0.052)
× Rest of Australasia	−0.076	−0.234	−0.240	−0.138*	−0.128	−0.127
	(0.147)	(0.177)	(0.174)	(0.081)	(0.095)	(0.094)
× Rest of Europe	−0.131	−0.333***	−0.324***	−0.046	−0.122**	−0.115**
	(0.098)	(0.102)	(0.101)	(0.044)	(0.053)	(0.053)
× Turkey	−0.134	−0.270	−0.247	0.019	−0.107	−0.121
	(0.248)	(0.258)	(0.255)	(0.088)	(0.105)	(0.104)
× UK	−0.208	−0.147	−0.127	−0.136	−0.203	−0.164
	(0.180)	(0.150)	(0.149)	(0.118)	(0.129)	(0.125)
× Unknown	−0.101	−0.414*	−0.381*	0.172*	0.048	0.048
	(0.200)	(0.211)	(0.213)	(0.091)	(0.102)	(0.101)
× USA	−1.786***	−0.863**	−0.616	−0.350**	−0.183	−0.089
	(0.329)	(0.364)	(0.387)	(0.177)	(0.206)	(0.209)
Lag Outcome		✓	✓		✓	✓
Lag Outcome × Country Group			✓			✓
Num. Obs.	29,529	23,846	23,846	29,529	23,846	23,846
R^2	0.652	0.720	0.724	0.765	0.756	0.761

Notes: All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Columns (4) to (6) also include the number of offers as a control variable. HC1 Robust standard errors between parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

the corresponding enrolment elasticities for these groups are typically negative or insignificant, suggesting that higher fees attract more applicants but deter conversion to enrolment—a pat-

tern consistent with aspirational application behaviour and financial screening at later stages. In contrast, applicants from the Rest of Europe and the Rest of the Americas exhibit negative application elasticities, indicating conventional price-sensitive demand.

At the postgraduate level (Table 3), the pattern becomes more uniformly negative. Students from Europe and the Americas are significantly deterred by higher tuition fees in both applications and enrolments; for example, US applicants show an application elasticity of 1.79 in the baseline model. An exception arises among students from the Middle East, who exhibit positive application elasticities but muted or negative enrolment responses, again suggesting a divergence between perceived prestige effects and final affordability constraints.

These results underscore pronounced cross-country heterogeneity in tuition responsiveness. In some markets—particularly in emerging economies—tuition levels may act as quality signals that raise initial interest but fail to translate into actual enrolments. By contrast, students from mature higher education markets respond in a more standard demand-elastic manner, with price increases systematically reducing both applications and enrolments.

4.3 Persistence of Demand by Country Group

Table 4 reports coefficients on the interactions between the lagged dependent variable and country groups. This captures persistence in applications and enrolments across years.

The estimates reveal substantial heterogeneity in spillover intensity across country groups. Students from China and India exhibit the strongest linkages between cohorts: lagged applications or enrolments are highly predictive of current demand, with large and statistically significant coefficients on the interaction terms. This pattern suggests that these markets are characterized by strong peer networks, institutional familiarity, and the diffusion of information through word-of-mouth or alumni channels.

Positive but more moderate spillover effects are also observed among students from the Middle East and Sub-Saharan Africa, indicating that informational or social learning mechanisms operate there as well, though with less persistence. By contrast, students from North America and the Rest of Europe show weak or statistically insignificant spillover effects, consistent with more independent decision-making and lower reliance on network-based information flows.

Spillover effects are generally attenuated at the enrolment stage, reinforcing the interpretation that these dynamics primarily influence application behaviour through information transmission rather than enrolment through peer coordination.

Table 4: Persistence in Demand by Country Group at the Application and Enrolment Stages

	Applications		Enrolments	
	UG	PG	UG	PG
	(1)	(2)	(3)	(4)
China	0.600***	0.810***	0.432***	0.283***
	(0.032)	(0.032)	(0.047)	(0.034)
European Union	0.495***	0.474***	0.163***	0.097***
	(0.020)	(0.020)	(0.019)	(0.013)
India	0.730***	0.856***	0.199***	0.159***
	(0.059)	(0.031)	(0.067)	(0.044)
Indonesia	0.415***	0.860***	0.078	0.126**
	(0.112)	(0.051)	(0.086)	(0.049)
Middle East	0.547***	0.694***	0.017	0.006
	(0.054)	(0.039)	(0.042)	(0.027)
Rest of Africa	0.466***	0.481***	−0.046*	0.005
	(0.067)	(0.039)	(0.027)	(0.024)
Rest of Americas	0.388***	0.599***	0.114*	−0.006
	(0.063)	(0.033)	(0.058)	(0.023)
Rest of Asia	0.544***	0.677***	0.213***	0.081***
	(0.021)	(0.019)	(0.023)	(0.017)
Rest of Australasia	0.052	0.367***	−0.029	0.044
	(0.154)	(0.116)	(0.055)	(0.048)
Rest of Europe	0.393***	0.367***	0.122***	0.044*
	(0.043)	(0.047)	(0.038)	(0.025)
Turkey	0.809***	0.788***	0.190***	−0.060
	(0.059)	(0.086)	(0.055)	(0.056)
Unknown	0.343**	0.568***	0.090	0.171***
	(0.144)	(0.152)	(0.067)	(0.042)
USA	0.485***	0.798***	0.110*	0.171***
	(0.068)	(0.040)	(0.066)	(0.034)
Average Demand Persistence	0.526***	0.653***	0.190***	0.117***
	(0.012)	(0.011)	(0.012)	(0.008)

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table reports the estimated persistence in demand for each country group, which corresponds to the lag of the dependent variable interacted with the country group. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Standard errors are HC1.

4.4 Elasticity by Subject Area

We extend the baseline specification in Equation (1) by interacting tuition fees with subject-area indicators, allowing elasticity estimates to vary across subject areas. This framework captures heterogeneity in students' price responsiveness that may reflect differences in expected earn-

Table 5: Undergraduate Fee Elasticities by Subject Area

	Applications			Enrolments		
	(1)	(2)	(3)	(4)	(5)	(6)
Log Fees × Engineering	0.307**	0.258	0.253	−0.112	−0.114	−0.114
	(0.148)	(0.194)	(0.194)	(0.069)	(0.097)	(0.097)
× Arts & Humanities	−0.167	−0.098	−0.124	−0.154*	−0.085	−0.092
	(0.179)	(0.237)	(0.237)	(0.088)	(0.127)	(0.128)
× Computing	−0.419**	−0.513**	−0.493**	−0.110	−0.150	−0.147
	(0.169)	(0.207)	(0.206)	(0.080)	(0.113)	(0.113)
× Health Sciences	−0.035	−0.024	−0.035	−0.119*	−0.065	−0.065
	(0.147)	(0.194)	(0.194)	(0.071)	(0.098)	(0.099)
× Law	−0.627***	−0.480	−0.377	−0.431***	−0.318*	−0.284
	(0.233)	(0.301)	(0.300)	(0.124)	(0.178)	(0.182)
× Natural Sciences	−0.064	−0.030	−0.050	−0.089	0.011	0.003
	(0.148)	(0.195)	(0.195)	(0.071)	(0.100)	(0.101)
× Other STEM	−0.005	−0.033	−0.030	−0.066	−0.014	−0.010
	(0.158)	(0.211)	(0.210)	(0.074)	(0.105)	(0.105)
× Social Sciences	0.001	0.130	0.150	−0.269***	−0.164	−0.147
	(0.178)	(0.238)	(0.238)	(0.089)	(0.126)	(0.126)
Lag Applications		0.535***	0.535***			
		(0.012)	(0.012)			
Log Offers				0.368***	0.300***	0.298***
				(0.006)	(0.006)	(0.006)
Lag Enrolments					0.193***	0.193***
					(0.012)	(0.012)
Time-Varying Controls			✓			✓
Num.Obs.	23,399	18,708	18,708	23,399	18,708	18,708
R^2	0.685	0.723	0.725	0.638	0.652	0.654

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Columns 3 and 6 include lagged dependent variables, but omit country-specific interactions with those lags for brevity. The country-specific interactions with the lag terms can be found in the Appendix. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Standard errors are HC1.

ings, program reputation, or substitutability across subjects.

Tables 5 and 6 report the resulting coefficients for undergraduate and postgraduate applications and enrolments, respectively. Columns (1) to (3) present application models with progressively richer controls, while columns (4) to (6) report corresponding enrolment regressions. Models including the lagged dependent variable (columns 2–3 and 5–6) are our preferred specifications.

The postgraduate results (Table 6) show uniformly negative price effects across most sub-

Table 6: Postgraduate Fee Elasticities by Subject Area

	Applications			Enrolments		
	(1)	(2)	(3)	(4)	(5)	(6)
Log Fees × Engineering	0.174*	0.092	0.029	0.010	−0.068	−0.108
	(0.098)	(0.112)	(0.113)	(0.055)	(0.079)	(0.080)
× Arts & Humanities	−0.225***	−0.272***	−0.310***	−0.020	−0.074	−0.109*
	(0.082)	(0.086)	(0.087)	(0.045)	(0.061)	(0.060)
× Bus. & Mnmtg.	−0.474**	−0.581***	−0.509**	−0.099	−0.183	−0.166
	(0.229)	(0.196)	(0.201)	(0.101)	(0.113)	(0.114)
× Computing	−0.647***	−0.503***	−0.360**	−0.159**	−0.170*	−0.186*
	(0.115)	(0.133)	(0.138)	(0.065)	(0.101)	(0.098)
× Health Sciences	−0.305***	−0.359***	−0.388***	−0.159***	−0.231***	−0.210***
	(0.096)	(0.100)	(0.102)	(0.052)	(0.072)	(0.068)
× Law	−0.831***	−0.181	−0.107	−0.432***	−0.442**	−0.497**
	(0.224)	(0.264)	(0.280)	(0.147)	(0.213)	(0.212)
× Natural Sciences	−0.241***	−0.209**	−0.307***	−0.069	−0.124*	−0.172***
	(0.084)	(0.089)	(0.092)	(0.048)	(0.065)	(0.064)
× Other STEM	−0.081	−0.087	−0.050	−0.084	−0.121	−0.090
	(0.101)	(0.107)	(0.108)	(0.062)	(0.085)	(0.083)
× Social Sciences	−0.339***	−0.213*	−0.226**	−0.192***	−0.257***	−0.251***
	(0.102)	(0.111)	(0.113)	(0.064)	(0.088)	(0.086)
Lag Applications		0.654***	0.654***			
		(0.011)	(0.011)			
Log Offers				0.529***	0.450***	0.448***
				(0.006)	(0.006)	(0.006)
Lag Enrolments					0.116***	0.116***
					(0.008)	(0.008)
Time-Varying Controls			✓			✓
Num.Obs.	29,529	23,846	23,846	29,529	23,846	23,846
R^2	0.650	0.719	0.721	0.765	0.756	0.757

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. DV = dependent variable. Each coefficient is from a model including lag of the DV and its interaction with country group. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Standard errors are HC1.

jects. Computing, health sciences, and social sciences exhibit the largest and most statistically significant elasticities at both the application and enrolment stages, indicating high sensitivity of demand to tuition levels. Law and business & management show weaker and less stable effects, with statistical significance dissipating once lagged demand is included.

At the undergraduate level (Table 5), the results reveal pronounced heterogeneity. Engineering and other STEM subjects display relatively inelastic demand, consistent with high ex-

Table 7: Persistence in Demand by Subject Area at the Application and Enrolment Stages

	Applications		Enrolments	
	UG	PG	UG	PG
	(1)	(2)	(3)	(4)
Engineering	0.518***	0.565***	0.182***	0.069***
	(0.018)	(0.025)	(0.025)	(0.018)
Arts & Humanities	0.433***	0.596***	0.151***	0.076***
	(0.022)	(0.021)	(0.020)	(0.017)
Business & Management	0.482***	0.748***	0.636***	0.140***
	(0.145)	(0.022)	(0.114)	(0.025)
Computing	0.693***	0.797***	0.208***	0.107***
	(0.047)	(0.024)	(0.047)	(0.028)
Health Sciences	0.499***	0.626***	0.187***	0.135***
	(0.023)	(0.017)	(0.028)	(0.017)
Law	0.745***	0.702***	0.244***	0.093***
	(0.035)	(0.034)	(0.056)	(0.033)
Natural Sciences	0.455***	0.528***	0.145***	0.067***
	(0.022)	(0.021)	(0.025)	(0.017)
Other STEM	0.585***	0.706***	0.211***	0.151***
	(0.022)	(0.016)	(0.029)	(0.019)
Social Sciences	0.600***	0.649***	0.235***	0.124***
	(0.017)	(0.015)	(0.023)	(0.016)

Notes: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. DV = dependent variable. Each coefficient is from a model including lag of the DV and its interaction with country group. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Standard errors are HC1.

pected returns and limited domestic substitutes. By contrast, computing and law consistently show significant negative elasticities, implying greater price sensitivity among applicants in these fields. Enrolment elasticities are smaller in magnitude than application elasticities, particularly in law. This suggests that while higher tuition may discourage initial interest, the subset of admitted students who receive offers is less responsive to price at the enrolment stage.

4.5 Persistence in Demand by Subject Area

Table 7 examines the persistence of demand within subject areas by interacting the lagged dependent variable with subject-area indicators.

The results reveal consistently positive and statistically significant coefficients across nearly all fields, indicating substantial between-cohort persistence in both applications and enrolments. The magnitude of these effects varies by discipline, with particularly strong spillovers

Table 8: Cross–Price Elasticities

	Undergraduate		Postgraduate	
	(1)	(2)	(3)	(4)
Panel A – Applications				
Log Fees	0.261	−0.163	−0.379***	−0.311***
	(0.165)	(0.204)	(0.096)	(0.093)
Log Fees (Competitors)	−0.290**	−0.024	0.191***	0.091
	(0.132)	(0.158)	(0.066)	(0.068)
Lag Applications		0.545***		0.644***
		(0.012)		(0.012)
Num. Obs.	21,550	17,106	27,087	21,971
R^2	0.683	0.723	0.657	0.722
Panel B – Enrolments				
Log Fees	0.118*	0.107	−0.228***	−0.244***
	(0.066)	(0.085)	(0.048)	(0.056)
Log Fees (Competitors)	−0.089	−0.096	0.131***	0.104**
	(0.058)	(0.074)	(0.039)	(0.050)
Log Offers	0.372***	0.300***	0.518***	0.439***
	(0.007)	(0.007)	(0.006)	(0.006)
Lag Enrolments		0.195***		0.118***
		(0.012)		(0.009)
Num. Obs.	21,550	17,106	27,087	21,971
R^2	0.636	0.650	0.766	0.757

Notes: Robust standard errors in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Models include log of tuition fees and competitor fees, with and without lagged dependent variables. Enrolment regressions include log offers as a control.

in Law. This evidence suggests that past cohorts play a notable role in shaping subsequent application behaviour, likely through peer influence, alumni networks, or reputational reinforcement.

4.6 Cross-Price Elasticities

To assess competitive interactions in student demand, we augment the baseline specification with tuition fees from the Universitys main competitors. Table 8 reports the resulting cross-price elasticity estimates for undergraduate and postgraduate applications and enrolments, both with and without lagged dependent variables.

Consistent with the baseline results, the Universitys own tuition fees exert negative effects

on postgraduate applications and enrolments. The impact of competitors' fees, however, is less uniform and depends on the outcome and education level. Once lagged outcomes are included to account for persistence and spillover effects, in columns (2) and (4) of Panel A, competitor fees no longer significantly influence applications, suggesting that price changes at other institutions do not affect where students apply. By contrast, competitor prices significantly affect enrolment decisions (Panel B). This indicates that substitution among universities becomes more relevant after offers are received and financial considerations become salient.[4]

5 Conclusion

As one of the largest revenue sources for HE providers, understanding the elasticity of demand with respect to tuition fees is critical. This is particularly salient in an environment where HE funding is increasingly strained due to funding cuts and global economic shocks. In this paper, using unique internal data, we analyse tuition fee elasticity with respect to applications and enrolments for students at one of the largest UK universities.

While it is not clear to what extent these findings apply to universities more generally, our data enables us to go beyond existing research to consider both applications and enrolments, and consider heterogeneity by subject and country of domicile. We have also explored cross-price elasticity with respect to competitor institutions.

Overall, we find that UG international students[5] are inelastic to changes in tuition fees. On the other hand, PG students have an average elasticity of -0.27 for applications and -0.13 for enrolments. These averages broadly fit the literature and historic price elasticity estimates in the UK (i.e., Conlon et al., 2017; Dearden et al., 2011; Soo and Elliott, 2010). However, we find significant heterogeneity by subject and country of domicile.

Computing is the most elastic subject across both UG and PG. On the other hand, Engineering and other STEM subjects are almost completely inelastic to changes in tuition fees.

We also show that some emerging markets have positive price elasticities at the application stage, but they do not translate into enrolment once offers are received. These countries include India and the Middle East. Other countries, particularly those with large HE sectors themselves and many prestigious substitute HE providers, have more conventional demand behaviour with negative elasticities. These countries include the USA, the rest of the Americas, and the EU.

Our models also allow us to evaluate demand persistence in the application and enrolment process across countries and subjects. We find the strongest persistence for both UG and PG

[4] A full set of institution-specific estimates, although anonymized for disclosure reasons, is reported in the appendix.

[5] Domestic students' fees are capped during the study period and therefore exhibit no variation in fees we can exploit with our analytical approach

within China and India. Computing, Law, Social Science, and Management are the subjects with the strongest persistence.

This analysis also highlights several promising directions for future research. By separately examining elasticity at the application and enrolment stages, our findings underscore the importance of studying price responsiveness across the entire admissions life cycle rather than at a single point of decision. Distinguishing between these stages provides a more precise understanding of how tuition fees influence both initial interest and ultimate enrolment behaviour. Extending this framework beyond a single institution would be an important next step. Replicating similar analyses across the UK higher education sector could yield sector-wide elasticity estimates, reveal cross-institutional heterogeneity, and provide stronger empirical foundations for pricing and funding policy.

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Appendices

A Additional Regression Tables

Tables A.1 and A.2 break down these cross-price elasticities by individual competitor institutions, labeled from A to F.

Table A.1: UG Regression Results by Competitor Institution

	Main Competitors					
	A	B	C	D	E	F
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A – Applications						
Log fees	−0.302	0.123	−1.730***	0.028	−0.699***	−0.951***
	(0.375)	(0.512)	(0.275)	(0.540)	(0.213)	(0.280)
Log fees_competitor	−0.253	−0.842	1.065***	0.074	1.336***	0.753***
	(0.245)	(0.612)	(0.244)	(1.020)	(0.215)	(0.221)
Lag applications	0.467***	0.435***	0.542***	0.458***	0.521***	0.521***
	(0.017)	(0.019)	(0.015)	(0.020)	(0.015)	(0.014)
Num. Obs.	8,645	7,640	11,585	4,910	11,671	11,571
R^2	0.760	0.765	0.740	0.796	0.741	0.754
Panel B – Enrolments						
Log fees	−0.337*	−0.092	0.492***	0.319	0.139	0.155
	(0.185)	(0.249)	(0.156)	(0.294)	(0.106)	(0.127)
Log fees_competitor	0.237*	0.788***	−0.368***	−1.599***	−0.117	0.065
	(0.135)	(0.291)	(0.141)	(0.530)	(0.102)	(0.096)
Log offers	0.339***	0.305***	0.309***	0.355***	0.305***	0.307***
	(0.010)	(0.010)	(0.008)	(0.012)	(0.008)	(0.008)
Lag enrolments	0.177***	0.158***	0.203***	0.191***	0.200***	0.207***
	(0.017)	(0.019)	(0.015)	(0.021)	(0.015)	(0.015)
Num. Obs.	8,645	7,640	11,585	4,910	11,671	11,571
R^2	0.671	0.680	0.659	0.676	0.649	0.659

Notes: Robust standard errors in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Std. errors are HC1.

Table A.2: PG Regression Results by Competitor Institution

	Main Competitors					
	A	B	C	D	E	F
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A – Applications						
Log fees	−0.357***	−0.542***	−0.362***	0.001	−0.345***	−0.179
	(0.104)	(0.130)	(0.103)	(0.210)	(0.109)	(0.153)
Log fees_competitor	0.078	0.142	0.157*	0.005	−0.093	0.245*
	(0.059)	(0.095)	(0.094)	(0.253)	(0.075)	(0.138)
Lag applications	0.608***	0.617***	0.638***	0.553***	0.621***	0.633***
	(0.014)	(0.018)	(0.014)	(0.020)	(0.015)	(0.016)
Num. Obs.	14,705	10,281	15,638	8,678	14,027	13,826
R^2	0.747	0.741	0.736	0.744	0.733	0.727
Panel B – Enrolments						
Log fees	−0.309***	−0.216***	−0.229***	−0.091	−0.234***	−0.216*
	(0.064)	(0.079)	(0.062)	(0.150)	(0.067)	(0.113)
Log fees_competitor	0.158***	0.046	0.049	−0.222	−0.017	−0.053
	(0.043)	(0.081)	(0.057)	(0.188)	(0.059)	(0.091)
Log offers	0.431***	0.453***	0.442***	0.408***	0.427***	0.438***
	(0.007)	(0.009)	(0.007)	(0.010)	(0.007)	(0.008)
Lag enrolments	0.125***	0.101***	0.120***	0.118***	0.123***	0.094***
	(0.010)	(0.013)	(0.010)	(0.013)	(0.011)	(0.011)
Num. Obs.	14,705	10,281	15,638	8,678	14,027	13,826
R^2	0.765	0.752	0.756	0.758	0.757	0.753

Notes: Robust standard errors in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. All models include fixed effects for country of domicile, CAH3 code, country group × academic year, and research subject × academic year. Std. errors are HC1.

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