



Home Office

A review of evidence relating to the elasticity of demand for visas in the UK

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The views expressed in this report are those of the authors, not necessarily those of the Home Office (nor do they represent Government policy).

Introduction

This paper sets out the economic theory behind using elasticities of demand to estimate the behavioural response to increases in the cost of a visa, an in-depth literature review on the key proxy indicators used to estimate this response, and a comparison to previous estimates used in Impact Assessments to date.

Context

A visa is an official document that allows the bearer to legally enter a foreign country, usually taking the form of a sticker or a stamp in the bearer's passport. Visa requirements are generally used to check and control the flow of visitors or legal migration into and out of a country, prevent illegal immigration and other criminal activities, and income from visa fees can act as a source of government revenue.

There were over 2.9 million visas granted for all reasons in the UK in 2018, a 7% increase on the previous year, continuing the upward trend across all visa categories seen over the last decade. Of these, 77% were to visit, 8% were to study (excluding short-term study), 6% were to work and 2% for family reasons.¹

There are over 100 different types of visas that can be issued in the UK. When the Government changes the price of a visa, this change could potentially affect demand for that visa in the future. For policy appraisal we attempt to estimate and quantify this impact.

Price elasticity of demand for visas

A price elasticity of demand would tell us by how much demand for a product or service would change, given a 1% change in its price. This captures an individual's behavioural response to the change in price and is calculated using the following formula:

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

If the price elasticity is greater in magnitude than -1, demand is said to be *elastic* (demand will change proportionately more than the price change); if the price elasticity is between 0 and -1, demand is said to be *inelastic* (demand will change proportionately less than the price change).

There is very little research on the price elasticity of demand for visas in isolation and the research that has been done does not suggest much, if any, impact on visa demand from modest changes in visa prices. Oxford Economics (2008) and PA Consulting (2006) were unable to quantify the negative impact from raising visa fees with any confidence. The few significant estimates from Oxford Economics were around -0.09, meaning that a 1% increase in the price of a visa leads to a -0.09% (less than one-tenth) reduction in visa demand. Jena

¹ <https://www.gov.uk/government/publications/immigration-statistics-year-ending-december-2018/summary-of-latest-statistics>

and Reilly (2013) did not find price elasticity estimates for UK visa demand from international students in developing countries that are significantly different from 0.

Analysis by Home Office economists also found no clear evidence of a relationship between changes in fees and the volume of applications for various visa products.

However, a visa is only one (comparatively small) element of the total cost or value of coming to the UK, so should not be considered in isolation. As such, it is perhaps not surprising that there is little observable impact of fee changes on demand.

To account for this, we instead need to consider how the **total** cost or value of coming to the UK has changed and consider the behavioural response of changes in this cost to the activity associated with the visa.

Proxy elasticities to estimate demand for visas

While the individuals for each of the 100+ visa products will face a different expected cost or value of coming to the UK, we can consider that most individuals coming to the UK, and their associated behavioural response, fall into four broad categories: visitors, students, workers and dependants. Alongside these, there are additional visa products for settlement and for firm sponsorship.

For each, we use the behavioural response to changes in the total cost or value of the associated activity as a proxy for the price elasticity of demand for the visa. This makes intuitive sense as demand for the visa is derived from demand for tourism, labour and education.

Worked Example 1 – Short-term visitor visas

In a hypothetical world, short-term visitor visas are priced at £100 and the average cost of airfare to the UK is £400.

Therefore, for a potential visitor to the UK, the total cost of coming to the UK is £500.

If the price of the visa was increased by 10% to £110, the new total cost of coming to the UK would be £510 – a 2% increase.

If the price elasticity of demand for air travel was -0.5, that would mean that for a 1% increase in the total cost of travel, demand for the travel would fall by 0.5%.

In our example, the 2% increase in the total cost of travel would result in a 1% fall in demand for that air travel, and therefore demand for visitor visas.

Crucially, while the proxy elasticity used will be consistent across broad categories, the magnitude of the reduction in demand will be affected by the total cost or value of each route.

Worked Example 2 – Tier 2 worker visa

In this hypothetical case, Tier 2 visas are priced at £500 and the average salary – and therefore expected value of travel to the UK – is £100,000 over the length of the visa.

Therefore, for a potential worker coming to the UK, the total value of coming to the UK is £99,500 over the course of the visa.

If the price of the visa was also increased by 10% to £550, the new total value of coming to the UK would be £99,450 – a 0.05% decrease.

If the wage elasticity of labour supply was also 0.5, that would mean that for a 1% decrease in the total expected value, willingness to supply labour would fall by 0.5%.

In our example, the 0.05% fall in the value of travel would result in a 0.025% fall in willingness to supply labour, and therefore demand for Tier 2 visas.

This methodology and the use of proxy elasticities, as highlighted in Table 1, has been used by the Home Office in estimating the potential economic impact of increases to visas fees in Fee Orders and Fee Regulations to date, most recently in the Immigration and Nationality (Fees) Regulations 2019.²

Table 1: Proxy elasticities for the price elasticity of demand for visa products

Category	Justification	Products
Workers	Migrants demand Home Office products in order to supply labour in the UK. The wage elasticity of labour supply is thus used to estimate the impact on volumes of the proposed fee changes, e.g. an increase in fee is a reduction in expected wage, so should reduce labour supply.	<ul style="list-style-type: none"> • Tier 1 visa • Tier 2 General • Tier 5 Youth mobility and temporary worker visa
Students	Migrant students demand Home Office student products in order to purchase education in the UK. Price elasticity of demand for higher education is used as a proxy for migrant price elasticity of demand for all types of education accessed through Tier 4.	<ul style="list-style-type: none"> • Tier 4 visa • Confirmations of Acceptance for Studies (CAS)
Visitors	The price elasticity of demand for air travel is used as a proxy for price elasticity of demand for a visit to the UK as most visitors arrive in the UK by air.	<ul style="list-style-type: none"> • Visit visa – all lengths • Transit visa
Firm sponsorship	Firms demand Home Office products in order to bring migrants to the UK to fill employment vacancies. The wage elasticity of labour demand is thus used to estimate the impact on volumes of the proposed fee changes for sponsorship.	<ul style="list-style-type: none"> • Sponsor Action Plan • Tiers 2, 4 and 5 Certificates of Sponsorship Sponsor Licences
Dependents	For in-country dependent applications, as applicants are already in the UK with their family member (the main migrant), the response to changes in prices is likely to be negligible.	<ul style="list-style-type: none"> • In-country dependents

² https://www.legislation.gov.uk/ukia/2019/75/pdfs/ukia_20190075_en.pdf

Settlement and nationality	For settlement and nationality applicants, price sensitivity is assumed to be similar to that of migrants supplying labour. The rationale is that the majority of applicants would have been in the UK for longer than 5 years before being eligible to apply for Indefinite Leave to Remain (ILR) or nationality, hence may be more likely to be in or want to work.	<ul style="list-style-type: none"> • Settlement visa • Certificate of Entitlement • Vignette Transfer Fee • Naturalisation • ILR • Travel documents
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The purpose of this literature review is to explore the most recent research and create an updated evidence base to inform the range of elasticity estimates used in measuring the economic impact of a change in the price of visas. Due to a relative unavailability of UK-specific evidence, this review has considered an array of global literature. While it is not an exhaustive review of all studies in these areas, the review attempts to collect some of the most useful studies, where particular weight has been placed on meta-analyses and those with a more contemporary date of study, relevant geography, greater reputation of the authors/organisation and those with unique insight.

Headline results

This review focused on the four key elasticities used to estimate the demand for specific visa products. For each, a central estimate was selected which best reflected the available evidence, with specific weight placed on literature that focused on the UK. A recommendation has also been made for high and low elasticities to be used for any sensitivity analysis, with the low elasticity always set at zero to reflect the inconclusive literature on price elasticity of demand for visas in general.

At a high level, this review found that the four key proxy indicators were relatively inelastic, with central estimates ranging between -0.3 and -0.6. In particular, the three consumer-focused proxy indicators (labour supply, air travel and education) were found to have a particularly narrow range of elasticities between -0.3 and -0.4.

Table 2: Headline proxy elasticities

Elasticity	Magnitude		
	Low	Central	High
Wage elasticity of labour supply	0	-0.3	-0.6
Price elasticity of demand for higher education	0	-0.4	-0.8
Price elasticity of demand for air travel	0	-0.35	-0.7
Wage elasticity of labour demand	0	-0.6	-1.2

Work-related visas – supply of labour

Migrants typically demand work-related visa products in order to supply labour in the UK. Therefore, the reduction in migrant volumes entering or remaining in the UK for work-related reasons as a result of changes in visa prices has been estimated by applying estimates of the wage elasticity of labour supply (which measures the responsiveness of the supply of labour to changes in wages) to the expected earnings over the duration of the visa. Increases in visa fees (paid by migrants) are therefore considered as equivalent to a reduction in pay, measured over the duration of the visa.

Within the relevant research, it appears that wage elasticity of labour supply is generally inelastic but differs significantly between men and women. In a meta-analysis of 30 studies conducted across developed European nations and the United States (US), Evers, Mooij and Vuuren (2008) calculated mean elasticity values of -0.07 and -0.43 for men and women respectively, with much more variation for women. This is partially attributed to lower participation rates from women, thereby implying that as participation rates increase over time,

it is likely their elasticities will decrease. Estimates for men also hardly differ across countries, in contrast to estimates for women which show some cross-country variation.

Much of this is echoed in research from Bargain, Orsini and Peichl (2014) who examined international comparisons in Europe and the US. They found married men and women have mean total hour elasticities of -0.10 and -0.27 respectively, again with much more variation for women. Although they manage to find significant differences across countries for men, they also find these are less pronounced than for women.

Bargain, Orsini and Peichl (2014) also demonstrated that most of the total hours response is driven by the extensive margin. This was also the case for UK research by Blundell, Bozio and Laroque (2011), who estimated a total hours elasticity of -0.3 to -0.44. This was broken down into a median extensive margin elasticity (referring to the decision to work) of -0.3 and -0.09 to -0.23 for the intensive margin elasticity (referring to how many hours to work).

Based on the above, a central scenario should assume a small reduction in the aggregate willingness to supply labour as a result of changes in visa fees, applying an elasticity of -0.3. This is in line with both the mean and median values of the studies considered and is within the range of the most relevant UK study which found a range of between -0.3 and -0.44. A low scenario should assume a zero response to the change in wage, while a high scenario should use an elasticity twice that of the central scenario, equal to -0.6.

Visas for education – cost of higher education

International students demand student visa products in order to purchase education in the UK. Therefore, the reduction in migrant volumes entering the UK for study-related reasons, as a result of changes to study-related visa fees, could be estimated by applying estimates of the price elasticity of demand for higher education (which measures the responsiveness of the demand for higher education due to changes in costs) to the overall costs of undertaking higher education in the UK.

There is a relatively large volume of research conducted on this subject area with a wide range of statistically significant estimates that mostly tend to lie in the inelastic range. Much of it is in the context of the US – an important distinction as the estimates tend to differ when compared to studies on the UK and other western European countries.

In meta-analyses, Leslie and Brinkman (1987) and Gallet (2007) calculated average estimates of around -0.73 and -0.60 respectively, although only a small proportion of Gallet's sample is from outside the US. Hemelt and Marcotte (2011) examined all public four-year college and universities in the US and found a lower average tuition fee elasticity of total headcount at -0.0958. However, this figure varies by type of institution, with the top 120 US institutions reaching an average of -0.2505, since they would be competing nationally.

In the UK, findings from Dearden, Fitzsimons and Wyness (2011) are of a slightly lower magnitude than those in the related US literature. They show that tuition fees have had a minor negative effect on participation, with a statistically significant elasticity of -0.14. On the other hand, Conlon, Ladher and Halterbeck (2017) found slightly higher estimates for undergraduates at -0.327, with an additional lagged effect of -0.221. However, for postgraduates, they estimate -0.213 with no lagged effect, likely because postgraduate courses are often one year in length.

Evidence of a non-linear relationship was found in a study on intra-European student mobility by Caruso and de Wit (2014), though they find rather unusual results for tuition fee per semester elasticities of around -11.2 to -14.2.

Based on the above, a central scenario would assume an inelastic reduction in the demand for higher education as a result of changes in visa fees. The elasticity value was chosen from the study most consistent with international students coming to the UK (Conlon, Ladher and Halterbeck, 2017) where a weighted average of -0.4 was calculated as a central estimate. A low scenario should assume a zero response to the change in price, while the high scenario should use an elasticity of -0.8.

Visit visas – demand for air travel

The airfare elasticity of demand is the responsiveness of the demand for air travel to changes in the price of air travel. Estimates of this from Department for Transport (DfT) figures have been used as a proxy for the price elasticity of demand for a trip to the UK. In the case of visitors – who are not generally assumed to derive an income from their visit – the change in the price of a visit visa has been applied to the typical airfare paid by visitors to the UK from visa-paying countries to estimate the reduction in visa demand as a result of the increase in visa price.

DfT released a UK Aviation Forecast in 2017³ which forecasts air passengers, aircraft movements and CO₂ emissions at UK airports. Within this report DfT calculated that the elasticity of air passengers with respect to the airfare for foreign businesses was -0.2, foreign leisure was -0.7 and international to international transfers was -0.5. There was little noteworthy change from the previous forecast in 2013.

Within the 2013 forecast document, DfT compared their elasticity estimates with those found in the literature and found they were relatively similar. According to Dargay and Hanley (2001), price elasticity for foreign business and leisure was estimated to be -0.3, which is somewhat close to the estimates of -0.2 and -0.7 found in the 2017 forecast.

As -0.7 was the most elastic elasticity found in the 2017 DfT forecast and was substantially more elastic than the -0.09 found by Oxford Economics (2009) as the aggregate elasticity for visas, the suggestion would be to use this as the elasticity in a high scenario, while a mid-point of -0.35 should be used in the central scenario. Consistent with other proxy indicators, an elasticity of zero should be used for a low scenario.

Sponsorship – demand for labour

When a firm is looking to sponsor a foreign worker to come to work in the UK, we can treat an increase in the cost of sponsorship as an increase in the total cost of hiring that new worker. As this does not specifically concern the demand for individual visas, to which visa fee changes relate, it is not considered in as much detail as other proxy elasticities.

Lichter, Peichl, and Siegloch (2013) found in a meta-analysis of 82 different micro-level studies published between 1993 and 2013 across Europe that the mean labour demand elasticity was around -0.56, while the UK/Ireland specific mean was slightly more elastic at -0.57.

³ [UK aviation forecasts 2017, Department for Transport, October 2017](#)

Hijzen and Swaim (2010) found a similar result, estimating the elasticity of labour demand between 1980 and 2002 from 11 OECD (Organisation for Economic Co-operation and Development) countries across 20 industries. They estimated a mean elasticity of -0.5 at the end of the period, although noted the marked increase in magnitude from -0.2 at the beginning of the period in 1980.

Bruno, Falzoni, and Helg (2004) found in a study of UK manufacturing industries from 1970 to 1996 that the time period is significant in estimating the labour demand elasticity. Specifically, that the short-run elasticity is extremely inelastic (-0.04 to -0.08) when compared to the long-run elasticity (0.4 to 0.6). Addison *et al.* (2005) further note that the elasticity of labour demand varies considerably across industries, estimating that the short-run elasticity of labour demand in Germany varies between -0.5 for manufacturing industries and -2.1 for service industries.

While the evidence suggests that the behavioural response of employers to changes in expected wages varies considerably across countries, time period and industry, a central scenario would need to consider the best available evidence for the UK specifically across all industries. Therefore, a central elasticity of -0.6 based on the study by Lichter, Peichl and Siegloch (2013) is most appropriate, and is in line with the mean and median values across all the studies considered. A high scenario should use a value of -1.2 while a low scenario should assume no behavioural response.

Dependants of migrants

For in-country dependant applications, a central scenario would assume no price sensitivity of visa demand. This is because applicants are already in the UK with their family member (the main migrant). However, a 'high' scenario could assume an elasticity of -0.3 (based upon the central elasticity of labour supply) to reflect the chance that some applications could potentially be deterred.

The elasticity for out-of-country dependents would be assumed to be the same as the elasticity applied to the main applicant.

Settlement and nationality

For settlement and nationality applicants, price sensitivity is also assumed to be similar to that of migrants supplying labour. The majority of applicants would have been in the UK for longer than five years before being eligible to apply for ILR or nationality, and are therefore likely to have been in or wanting to work.

A wage elasticity of -0.3 should therefore be applied to a central scenario. It is possible that the true elasticity would be closer to zero, as applicants would have invested time in the UK (five years) before being eligible to apply for leave or nationality and, by applying for settlement or nationality, demonstrate they would like to remain in the UK indefinitely. In addition, a one-off payment for the visa fee allows for a lifetime of access to the UK labour market and the associated wages.

For these reasons, the elasticity of -0.3 may overstate the responsiveness of an applicant to a fee change, and any sensitivity analysis would use an elasticity range of 0 to -0.6 reflecting the available evidence, uncertainty and range of possible deterrence risks.

Comparison to pre-2019 elasticities

The Home Office has historically used proxy indicators in the estimation of the economic impacts of changes to visa fees. Table 3 compares the headline proxy indicators estimates as part of this review against the legacy indicators used in Fee Order and Fee Regulation Impact assessments up to and including the Immigration and Nationality (Fees) Regulations 2019.⁴

Table 3: Headline proxy elasticities as compared to pre-2019 equivalents

Elasticity	Original magnitude			Current magnitude		
	Low	Central	High	Low	Central	High
Wage elasticity of labour supply	0	-0.5	-1.1	0	-0.3	-0.6
Wage elasticity of labour demand	0	-0.75	-1.0	0	-0.6	-1.2
Price elasticity of demand for education	0	-0.5	-1.0	0	-0.4	-0.8
Price elasticity of demand for air travel	0	-0.4	-0.8	0	-0.35	-0.7

Broadly, the latest evidence suggests that the response of demand for visas to changes in prices is more inelastic than previously thought. This change is likely a result of a greater number of referenced studies based specifically on the UK as opposed to the US or global average, as well as a reflection of changing behaviours over the period between now and the last literature review.

However, as these elasticities are applied to the **total** expected cost/income, these more inelastic elasticities are not expected to have a significant effect on the overall behavioural response when considered in the context of the relatively small changes to visa prices.

⁴ https://www.legislation.gov.uk/ukia/2019/75/pdfs/ukia_20190075_en.pdf

Annex: List of empirical studies referenced

Table A1: Empirical studies of the price elasticity of demand for visas

Source	Estimate of price elasticity of demand	Measure
Jena, F. & Reilly, B. (2013) 'The determinants of United Kingdom student visa demand from developing countries', <i>IZA Journal of Labor & Development</i> , vol. 2(1), p.6.	Between -0.2 and 0.37 (not statistically significant)	Estimates of price elasticity for visas. UK study that analyses demand for UK educational services by international students from 89 developing countries from 2001 to 2008.
Oxford Economics (2008) <i>Quantifying the impact of increased visa charges</i> . Final report for UKBA, DCMS and Tourism Alliance.	-0.09	UK study of price elasticity of demand for visas, covering 2004 to 2008, which saw two visa fee increases. They tested 19 specifications and visa fees are not usually significant. In the few instances where they were, price elasticity was around -0.09 and generally for the lowest income group (<10% visa applications and issues).

Table A2: Empirical studies of the price elasticity of demand for tourism

Source	Estimate of price elasticity of demand	Measure
Deese, W. (2013) <i>Determinants of inbound travel to the United States</i> . US International Trade Commission. No. 2013-02A.	Between -0.316 and -0.391	Travel price elasticity based on travellers to the US from 50 countries from 1990 to 2010.
Pham, T. D., Nghiem, S., & Dwyer, L. (2017) 'The determinants of Chinese visitors to Australia: A dynamic demand analysis', <i>Tourism Management</i> , vol. 63, issue C, pp. 268-276.	Short-run: -4.4 Long-run: -6.4	Price elasticity of demand for Australian tourism from Chinese visitors from 1991 to 2014.
Schiff, A. & Becken, S. (2011) 'Demand elasticity estimates for New Zealand tourism', <i>Tourism Management</i> , Elsevier, vol. 32(3), pp. 564-575.	Between -1.75 and -0.26	Price elasticity of demand estimates for New Zealand tourism from various countries from 1997 to 2007.

Table A3: Empirical studies of the wage elasticity of labour supply

Source	Estimate of wage elasticity of labour supply	Measure
Bargain, O., Orsini, K. & Peichl, A. (2012) <i>Comparing Labor Supply Elasticities in Europe and the US: New Results (December 2012)</i> . SOEP paper No. 525.	Men: between 0 and 0.4 Women: between 0.1 and 0.6	Elasticity of labour supply based on total hours in response to changes in tax-benefit policies. Uses data from Europe and the US from 1998 to 2005.
Blundell, R., Bozio, A. & Laroque, G. (2011) <i>Extensive and intensive margins of</i>	Between 0.3 and 0.44	Aggregate elasticity estimate for total hours of the 30 to 54 age group for UK

Source	Estimate of wage elasticity of labour supply	Measure
<i>labour supply: working hours in the US, UK and France</i> , IFS Working Papers W11/01, Institute for Fiscal Studies.		men and women from 1968 to 2008.
Evers, M., Mooij, R. & Vuuren, D. (2008) 'The Wage Elasticity of Labour Supply: A Synthesis of Empirical Estimates', <i>De Economist</i> , Springer, vol. 156(1), pp. 25-43.	Men: 0.07 Women: 0.43 (0.34 excluding outliers)	Mean estimates for a sample of 209 uncompensated labour supply elasticities in different developed countries. Average year of data sample in each study ranges from 1966 to 2000.
Jääntti, M., Pirttilä, J. & Selin, H. (2015) 'Estimating labour supply elasticities based on cross-country micro data: A bridge between micro and macro estimates?' <i>Journal of Public Economics</i> , vol. 127, pp. 87-99.	Between 0.23 and 0.64	Range is based on point estimates of average 'micro' and 'macro' elasticity estimates. Uses data from 13 countries, including from OECD. Data ranges from early 1970s to 2010s.

Table A4: Empirical studies of the price elasticity of demand for education

Source	Estimate of price elasticity of demand	Measure
Conlon, G.P., Ladher, R., Halterbeck, M. (2017). <i>The determinants of international demand for UK higher education</i> . Final report for the Higher Education Policy Institute and Kaplan International Pathways. London Economics.	Undergraduate: -0.33 in first year, -0.22 in second year (lagged effect) Postgraduate: -0.21	Price elasticity of demand for UK higher education from international students in 189 countries from 2000 to 2015.
Dearden, L., Fitzsimons, E. & Wyness, G. (2011) <i>The impact of tuition fees and support on university participation in the UK</i> (No. W11/17). IFS Working Papers.	-0.14	Elasticity estimate for UK higher education participation from 1992 to 2007 for those eligible for their first year of university.
Gallet, C. (2007) 'A comparative analysis of the demand for higher education: results from a meta-analysis of elasticities', <i>Economics Bulletin</i> , vol. 9(7), pp. 1-14.	-0.6	Mean tuition elasticity from a sample of 60 studies published between 1967 and 2004 from the US and rest of the world.
Hemelt, S.W. & Marcotte, D.E. (2011) 'The Impact of Tuition Increases on Enrollment at Public Colleges and Universities', <i>Educational Evaluation and Policy Analysis</i> , vol. 33(4), pp. 435-457.	Between -0.02 and -0.25	Elasticity estimates for total headcount in US higher education from 1991 to 2006.
Leslie, L.L. & Brinkman, P.T. (1987) 'Student price response in higher education: The student demand studies', <i>The Journal of Higher Education</i> , vol. 58(2), pp. 181-204.	-0.73	Corresponding price elasticity estimate for higher education in the US, based on a standardised sample of 25 studies conducted from 1967 to 1982.

Table A5: Empirical studies of the wage elasticity of labour demand

Source	Estimate of wage elasticity of labour demand	Measure
Addison, J., Bellmann, L., Schank, T. & Teixeira, P. (2005) <i>The Demand for Labor: An Analysis Using Matched Employer – Employee Data from the German Liab. Will</i>	Manufacturing: -0.5 Service: -2.1	Short-run elasticity estimates for unskilled workers within each sector. Data covers 1993 to 2002 and used information on 1,171

Source	Estimate of wage elasticity of labour demand	Measure
<i>the High Unskilled Worker Own-Wage Elasticity Please Stand Up?</i> IZA Discussion Paper No. 1780.		manufacturing plants in Germany.
Bruno, G.S., Falzoni, A.M. & Helg, R. (2004) <i>Measuring the effect of globalization on labour demand elasticity: An empirical application to OECD countries</i> . Università commerciale Luigi Bocconi.	Short-run: between -0.04 and -0.08 Long-run: between -0.39 and -0.59	UK estimates of labour demand elasticity from a study that produced estimates from data covering major industrialised countries from 1970 to 1996 and 40 manufacturing industries. Standard deviations are relatively high.
Görg, H. & Hanley, A. (2005) 'Labour demand effects of international outsourcing: Evidence from plant-level data', <i>International Review of Economics & Finance</i> , vol. 14(3), pp. 365-376.	-0.52 or -0.621	Wage elasticity of demand for labour estimates in the Irish electronic industry from 1990 to 1995 in 80 plants. Estimates depend on assumptions made around wages and outsourcing being exogenous or pre-determined.
Hijzen, A. & Swaim, P. (2010) 'Offshoring, labour market institutions and the elasticity of labour demand', <i>European Economic Review</i> , vol. 54(8), pp. 1016-1034.	1980: -0.2 2002: -0.5	Estimated elasticities at the beginning and end of the sample. Data for estimating elasticity covers 1980 to 2002 from 11 OECD countries and 20 industries.
Kölling, A. (2009) <i>Firm size and employment dynamics. Estimations of labour demand elasticities using a fractional panel probit model and establishment data</i> . Hochschule der Bundesagentur für Arbeit (HdBA) Working Paper No. 1.	-0.245	Average labour demand elasticity estimate. Data covers 2000 to 2007 for 16 industries within Germany.
Kölling, A. & Schank, T. (2002) <i>Skill-biased technological change, international trade and the wage structure</i> (No. 14). Diskussionspapiere/Friedrich-Alexander-Universität Erlangen-Nürnberg, Lehrstuhl für Arbeitsmarkt-und Regionalpolitik.	Manufacturing: between -0.572 and -0.362 Service: between -2.684 and 1.063 (1.063 was insignificant)	Short-run elasticity estimates which depend on skill levels within each sector, with elasticity generally decreasing with skill levels. Data covers 1994 to 1997, including 880 plants in West Germany.
Lichter, A., Peichl, A. & Siegloch, S. (2013) <i>Labor demand elasticities in Europe: a meta-analysis</i> . In NEUJOBS Working Paper. NEUJOBS.	Mean: -0.559 UK/Ireland Mean: -0.567 UK/Ireland Prediction: -0.529	Mean estimates from a sample of 82 different micro-level studies (containing 784 own-wage elasticity estimates) published from 1993 to 2013 from across all of Europe.
Lichter, A., Peichl, A. & Siegloch, S. (2014) <i>The Own-Wage Elasticity of Labor Demand: A Meta-Regression Analysis</i> . IZA Discussion Papers 7958. Institute for the Study of Labor (IZA).	Mean: -0.508 Median: -0.386	Average estimates from a sample of 105 studies (containing 942 own-wage elasticity estimates) published from 1980 to 2012 for 37 different countries.
Navaretti, G.B., Checchi, D. & Turrini, A. (2003) 'Adjusting labor demand: Multinational versus national firms: A cross-European analysis', <i>Journal of the European Economic Association</i> , vol. 1(2-3), pp. 708-719.	Short-run UK (multi)national enterprises: -0.46 (-0.43) Long-run UK (multi)national enterprises: -3.55 (-0.47)	Estimates are based on firm-level analysis from 11 European countries, including 4,300 firms in the UK (47% multinational).

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