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Quantifying the impact of increased visa charges

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1. Introduction

Overseas residents' arrivals to the UK decreased by 0.5% in 2007 from a record 32.7mn in 2006, with spending decreasing by 0.3% to £16.0bn. Thus, inbound tourism activity was still broadly stable last year despite sterling's strength (which did result in fewer North American visitors) and the higher travel costs associated with the surge in global fuel prices.

However, globally, the number of tourist arrivals increased by over 6% to 900mn last year with spending rising by 4% to £430bn, so the UK is falling behind other destinations. Many factors are clearly driving this underperformance – exchange rate movements, economic conditions including transport costs, security considerations following the London bombings and the emergence of new destinations around the world – but the increased cost of visas to enter the UK is a factor which has not yet been robustly evaluated.

Visa requirements apply to nationals of 108 countries (listed in Appendix A) but short-term visit visa applications from these potential visitors were equivalent to just under 5% of all the 32.6mn international visitors the UK received last year. Visa fees for such visitors to the UK were increased in July 2005, in April 2007 and again in April 2008¹. In particular, the decision by UKvisas (now the UK Border Agency) to raise the cost of multiple entry tourism visas for the UK on 1 July 2005 (from £36 to £50) appears to have had an adverse impact on arrivals from those countries that the UK Government deems that this level of border control is required. Initial analysis by the Tourism Alliance (based upon Jul-Sep 2005 figures) suggested annual growth in visitor numbers from residents of countries requiring visas to enter the UK declined by around ten percentage points, implying an annual loss in tourism revenue of £100mn. Subsequent rises in line with costs increased the average visa cost to £63 on 1 April 2007 (although at this time country-specific commercial partner fees (CPFs) for issuing visas were subsumed into a common visa fee) and £65 on 1 April 2008, significantly more than the visa costs of competing, European destinations, raising fears that tourism earnings are still being detrimentally affected and will be into the medium term.

The first rise in particular coincided with a slowdown in visa applications. This may suggest that higher visa fees have deterred visitors from coming to the UK. **The purpose of this study is to analyse rigorously, in more detail and within a comprehensive framework what impact, if any, visa fees have on short-term visit visa applications and issues once one has controlled for other relevant factors.**

1.1. Approach

As an initial step, previous national and international research on the impact of visa costs on arrivals and spending was reviewed. Then, a careful analysis of available evidence on recent UK visa applications and issues was undertaken, comparing the visits from countries subject to visa requirements with trends in visits from other countries. However, robust analysis requires the consideration of other factors that would

¹ Due to data availability, we cannot yet analyse the impact of this last increase in visa fees.

influence visa applications and issues. This is done within the framework of a small econometric model that aims to explain changes in visa applications and issues over time in relation to changes in economic conditions (such as incomes, bilateral exchange rates etc.) as well as visa fees. This model enables us to attempt to isolate and quantify the impact of visa fees.

1.2. Structure of report

The remainder of this report is structured as follows:

- Section 2 reviews **previous research**
- Section 3 explains which **data** were used;
- Section 4 shows developments in visa applications and issues in the form of **charts and tables**, focusing on the periods around the increases in visa fees;
- Section 5 introduces our **model of visa applications and visa fees** and presents our results;
- Section 6 **concludes**;
- The appendices show the **list of countries** subject to visas and used in this analysis and **detailed estimation results**.

2. Review of previous research

Although there has been much commentary on the impact upon visitors of visa restrictions and charges across the globe, few quantitative studies have been undertaken. Three are worthy of mention in the context of this study.

First, the **Tourism Alliance** published on 1 December 2005 a briefing on *The Impact of Visa Increases*. This paper commented critically on UKvisas' *Analysis of Visa Demand: July to September 2005* which had concluded that there is "no evidence that any fee increase has been a dominant factor in any reduction in visa demand" and that primary responsibility for any visa demand increase came from the impact of the July 2005 London bombings and higher airline fuel surcharges. The Tourism Alliance highlighted graphically (see Chart 1 below, p7) the sharper drop in annual growth in visa applications than the decline in either all inbound visitors or long-haul visitors in particular, suggesting that a specific factor (i.e. the increase in visa fees from £36 to £50 on 1 July 2005) was adversely affecting visa demand rather than the general impact of the bombings or fuel surcharges. This suggestion was backed up by anecdotal industry evidence but it was too soon to undertake more rigorous, econometric analysis.

Second, **PA Consulting for UKvisas** in November 2006 published its *Results of analysis of demand for UK visas applied for overseas*. This econometric study used data from 1998Q1 to 2006Q3 to estimate econometrically separate visa demand equations for China, India, Nigeria, Pakistan, Turkey, Russia and Saudi Arabia, and for all visitors to the UK. In addition to visa fees and seasonal dummies, Gross National

Income per head and the price of jet fuel were used as explanatory variables. However, although the per capita income variable was often significant, the study “found no statistically significant evidence that a material number of visitors to the UK would be deterred by increases in the visa price”.

Finally, **NIESR** evidence submitted to the inquiry into 'The Economic Impact of Immigration' conducted by the House of Lords Select Committee on Economic Affairs in 30 September 2007 found that change in migration into the UK is primarily accounted for by population growth in the source locations and the continuing pull effects from the rise in the migrant stock and per capita incomes in the UK relative to the source location. Although this analysis concentrated on long-term migration rather than short-term visitors, it again emphasised the role of per capita income levels in determining journeys to the UK.

The conclusion drawn from this review was that past econometric work was limited and had struggled to find a visa fee impact but that per capita incomes were an important variable to account for in any cross-country regression work that was undertaken in this study.

3. Data sources

3.1. Visa applications, visa issues and visa fees

We used data on short-term visit visa applications, visa issues, visa fees and commercial partner fees provided by the UK Border Agency (UKBA). No breakdown by purpose of trip was available. The application and visas issued data are collected on a monthly basis and were supplied on a consistent basis over the period from January 2004 to March 2008 (pre-2004 data were not used as UKBA felt available data at a country level previously used by, for example, PA Consulting, were unreliable). This data set comprised visa-issuing posts in 132 countries. Nationals of some of the countries where visas have been applied for and issued are not subject to visa requirements. Clearly, nationals of visa countries applied in these other (non-visa) countries (possibly because they were resident there) but no nationality breakdown for these posts was available and so they were therefore not included in the analysis.

Moreover, we also removed from our sample a few countries (Eritrea, Ivory Coast, Madagascar and Mozambique) for which applications and issues fall to and stay at zero at some point during the period under consideration. **This leaves 69 countries which are listed in Appendix A.**

We grouped the 69 countries in four income groups on the basis of per capita GDP levels. As explained in section 5, this enhances our empirical analysis. In addition, it provides a convenient way to look at the data.

Visa applications and issues vary during the year, according to regular seasonal patterns. Typically, applications increase sharply in the second quarter of the year, fall back a bit in the third quarter, and again in the fourth quarter to reach a low point for the year. In order to be able to look at the change in visa fees immediately after fee increases, it is necessary to control for these seasonal variations which

otherwise blur the picture. Since these variations differ from country to country, the best way to handle them is to use seasonal adjustment algorithms. This has been our approach.

Visa fees information was provided by UKBA in sterling terms and these were converted into local currencies using bilateral exchange rates from the IMF. The fee of £36 in place from July 2002 for a 6-month visit visa rose to £50 on 1 July 2005 and then to £63 on 1 April 2007 and £65 on 1 April 2008. Until April 2007, applicants could pay a country-specific commercial partner fee (CPFs) to the company in their country authorised to handle initially the visa issuance process; thereafter such fees were subsumed into the £63 charge as a global contract had been awarded. UKBA provided information on such CPFs for 23 countries – they ranged from under £4 in Bangladesh through £15 in China to £45 in Mozambique – and these were included in the overall visa fee used in our econometric analysis.

3.2. Visits

We used quarterly data on international visits to the UK from the International Passenger Survey provided by Visit Britain. These data cover 50 countries separately as well as 9 regional groups. Amongst the 50 countries, 14 are subject to visa requirements.

As in the case of visa applications and issues, visits fluctuate significantly during the year, with a peak typically reached in the third quarter and a trough in the first quarter of the year. This is consistent with the seasonal pattern of the visa applications and issues data, where the peaks and troughs occur one quarter earlier. We have also seasonally adjusted the visits data, again on a country-by-country basis in order to account for country-specific seasonal variations.

3.3. Macroeconomic and demographic data

We used data on macroeconomic indicators from the IMF which have the advantage of being estimated on a harmonised basis across countries. We used GDP per head, exchange rates and imports. In addition, we also took population data from the UN.

4. Analysis of recent developments in visa applications and issues

4.1. General developments since 2004

Visa applications in 2007 from all countries were 1.5mn or 4.6% of all international arrivals in that year, with visas issued being 1.2mn or 3.7% of all such arrivals.

For the 69 countries with visa requirements covered in this study, there were around 1.3mn visa applications in 2007 (Table 1) and slightly more than 1mn visas issued (corresponding to an issuance rate of slightly below 80% of applications). Relative to the population of these countries, applications amount to about 0.3 per 1000 inhabitants.

The second lowest income group (which includes countries from Nigeria to Ukraine) is the largest in terms of applications, accounting for more than 40% of the total, with a rate of applications per head of population about average. As expected, the highest income group (which includes countries from Tunisia to Qatar) has the highest rate of applications per head of population (nearly 1 for every 1000 inhabitants). As regards developments over the past four years, all groups except the lowest income group saw an increase in visa applications. In total, applications increased by 15% between 2004 and 2007 for these 69 countries (applications from all countries rose by 8%).

Table 1 - Visa applications

	2004	2005	2006	2007
Total	1,149,207	1,167,841	1,299,818	1,317,420
% of total				
Lowest income quartile	12.8%	9.9%	9.0%	8.5%
2nd lowest income quartile	41.8%	43.9%	45.5%	44.0%
2nd highest income quartile	22.5%	22.0%	22.0%	22.3%
Highest income quartile	22.9%	24.2%	23.4%	25.2%
Applications per 1000 inhabitants				
Average	0.25	0.25	0.28	0.28
Lowest income quartile	0.22	0.17	0.17	0.16
2nd lowest income quartile	0.26	0.27	0.31	0.30
2nd highest income quartile	0.15	0.15	0.16	0.17
Highest income quartile	0.79	0.84	0.90	0.98

Table 2 - Visa issues

	2004	2005	2006	2007
Total	859,736	884,045	996,697	1,038,479
% of total				
Lowest income quartile	9.0%	7.9%	7.7%	7.4%
2nd lowest income quartile	37.4%	37.9%	39.1%	38.8%
2nd highest income quartile	25.9%	24.9%	25.5%	25.1%
Highest income quartile	27.7%	29.3%	27.7%	28.7%
as % of applications				
Average	75%	76%	77%	79%
Lowest income quartile	53%	61%	65%	68%
2nd lowest income quartile	67%	65%	66%	69%
2nd highest income quartile	86%	86%	89%	89%
Highest income quartile	90%	91%	91%	90%

4.2. Developments around the visa fee increases

Since visa issues closely follow visa applications and the impact of increases in visa fees directly affects visa applications in the first instance and does not change materially the relationship between applications and issues, in what follows we focus on visa applications. For robustness checks, we applied our econometric analysis to visa issues as well.

Table 3 shows changes in visa applications in the periods around the rises in visa fees in July 2005 and in April 2007. In the third quarter of 2005, seasonally adjusted applications decreased by around 12% compared with the previous quarter, with falls in all four income groups ranging from around 6% to 20%. While applications had also fallen in the previous quarter in most cases, the third quarter fall was much more pronounced. Beside the rise in visa fees, this period included the bombings in London in July 2005 which also almost certainly had an impact on visa applications, issues and visits. By looking at the visits data, we can assess whether there may have been an impact of the rise in visa fees, beyond that of the bombings.

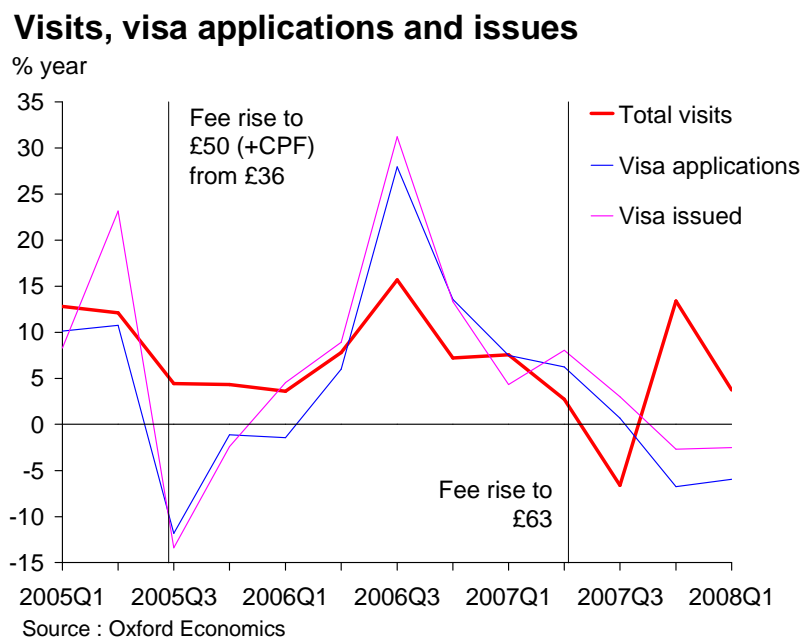
Table 3 - Changes in visa applications

% change	Jul-05			
	9 months to Jun 05	3 months to Jun 05	3 months post Jul 05	Year post Jul 05
Total	6.6	-2.6	-11.9	-2.1
Lowest income quartile	-17.2	-1.3	-13.3	-16.0
2nd lowest income quartile	12.9	-8.5	-6.1	1.4
2nd highest income quartile	6.3	-1.8	-12.6	-1.6
Highest income quartile	9.3	7.2	-20.2	-2.5
% change	Apr-07			
	Year to Mar 07	3 months to Mar 07	3 months post Apr 07	Year post Apr 07
Total	13.3	-2.6	3.5	-1.5
Lowest income quartile	2.3	-5.0	-3.3	-4.5
2nd lowest income quartile ¹	18.2	-1.0	0.8	-2.6
2nd highest income quartile ²	9.1	-1.9	3.0	-5.4
Highest income quartile ³	7.6	-2.7	15.8	11.3

Excluding Nigeria (1); China and Jordan (2); and Russia (3) for which visa fees decreased in April 2007 because of the size of previously imposed commercial partner fees.

Chart 1 shows the year-on-year growth rates in total visits and in visa applications/issues. While growth in all international visits to the UK decreased from 12.0% year-on-year to 4.4% from the second to the third quarter of 2005, growth in visa applications fell much more sharply, from +10.7% to -11.8%. If the impact of the London bombings is measured by the slowdown in total visits, then the rise in visa fees seems, on this basis, to have had a large additional negative impact on applications.

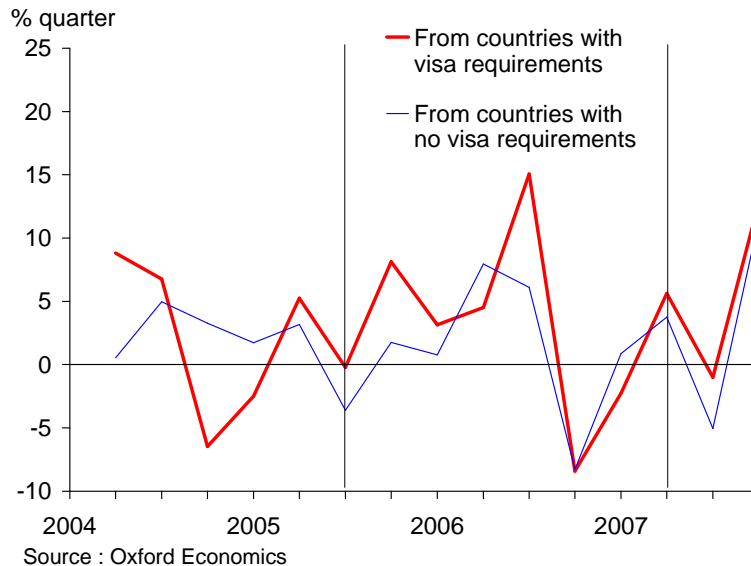
Chart 1



However, this picture is misleading for two reasons. First, visa applications had risen very sharply in 2004Q3 (more than 10% in the quarter, adjusted for seasonal variations). When one looks at the year-on-year growth rate, the 2004Q3 number drops out in 2005Q3 causing a large fall in the year-on-year growth rate in that quarter. However, this is an arithmetic effect that does not reflect what happened during 2005Q3 and cannot therefore be attributed to the impact of higher visa fees. Second, total visits appear relatively resilient in 2005Q3 thanks to an acceleration in visits from the “other” regional groups (+13% in the quarter compared with the previous quarter), a small but very volatile aggregate of individually small, unspecified countries. Using annual IPS data to break out these “other” groupings into individual countries and assigning them *pro rata* to the quarterly series, in order to obtain individual country figures for all countries, could – theoretically – be done but this approach was eschewed as variations in the resultant “data” at a country level would be unreliable given the sample size of the International Passenger Survey at that level of detail.

In order to avoid misperceptions, one needs to compare quarter-on-quarter growth rates in visits from countries with visa requirements to quarter-on-quarter growth rates in visits from countries without visa requirements. These are shown for the 14 individually identified countries in the quarterly IPS data in Chart 2. While visits from countries with visa requirements were roughly flat in 2005Q3 (i.e. declining by just 0.4%) compared with the previous quarter, they actually decreased by 3.6% for countries without visa requirements.

Chart 2

Visits to the UK - seasonally adjusted

This detailed analysis of the seasonally adjusted data suggests that there is no obvious impact of the substantial increase in visa fees in mid-2005 on applications.

Turning to April 2007, Table 3 shows that visa applications increased by 3.5% during the subsequent quarter. The top three income groups saw an increase in applications. Applications from the bottom income groups decreased but, since they had been on an on-going declining trend, this fall cannot *a priori* be attributed to the impact of visa fees.

5. Econometric analysis

Having examined in detail developments around the time of the two visa fee increases, we now turn to econometric analysis of the data, which allows us to take into account factors than other visa fee changes that may have affected visa applications and those issued and which should allow us to isolate the impact of visa fee increases.

The historical sample of visa applications and issues is short, covering only 17 quarters. This would be too short to extract robust quantitative information on a country-by-country basis. Therefore, we compensate for a limited historical perspective by looking at changes in visa applications and issues across countries as well as over time. This is a common technique when dealing with short time series. Variations in visa applications across countries potentially provide the necessary additional information on the impact of the economic factors and visa fees.

However, grouping together countries as diverse as Congo (with GDP per capita of \$100) and Qatar (with GDP per capita of \$35,000) is not appropriate. We chose to group the countries in four income groups. This way, we can reasonably assume that within a group, the impact of say, income, on visa applications is the same across all countries in that group.

For each country, visa applications (or issues) are hypothesised to be a function of:

- GDP per capita: this is a proxy for households' income. For many of the countries in the sample, household income data are not available. GDP per capita is the best widely available proxy.
- the bilateral exchange rate: this will capture changes in the cost of staying in the UK for a foreign visitor
- imports as a share of total UK imports: this is meant to capture the closeness of links between the UK and the country in question
- a country-specific trend that represents increased (or, for some conflict countries, decreased) easiness of travel
- visa fees

A logarithmic equation form was chosen to ensure scale-independent elasticities:

$$\log(\text{dep_var}_t^i) = \alpha_0^i + \alpha_1 * \log(\text{visa_fees}_t^i) + \alpha_2 * \log(\text{GDP_per_cap}_t^i) + \alpha_3 * \log(\text{exch_rate}_t^i) + \alpha_4 * \log(\text{import_share}_t^i) + \alpha_5 * \text{trend}_t$$

where i is the country identifier and dep_var is one of the four dependent variables tested.

For both visa applications and issues, we tested two different measures of the dependent variable. One is applications (or visas issued) divided by total visits to the UK. This measure has the advantage of controlling for the impact of the July 2005 bombings which should be reflected in total visits. However, it has the disadvantage that the country coverage of the applications and visits data is not identical and that, as observed in section 4, visits are typically delayed by one quarter compared with applications. Given these limitations, we also tested applications (or issues) per head of population as another form of the dependent variable. The drawback of this measure is that it may overemphasize the negative impact of the increase in visa fees in July 2005 by confusing it with the impact of the London bombings.

For visa fees, we also looked at several measures. In principle, fees in local currency should be what matters to the visitor. However, this measure varies significantly due to exchange rate variations so that we cannot be sure that we are truly capturing the effect of visa fees. We looked at visa fees in sterling as well. Moreover, visa fees in real terms (i.e. adjusted for changes in prices and wages in the country) should be the relevant indicator. However, especially over a period of a few years, visitors may not adjust nominal fees for changes in their purchasing power. For this reason, we tried nominal fees as well. Finally, we also tested simple dummies equal to 1 in 2005Q3 and 2007Q2.

Altogether this gives us 5 measures of visa fees which we include with or without the exchange rate as a

separate variable, thereby giving 10 specifications for the visa fees-exchange rate combinations. With also the two measures of applications and issues described above (either applications/issues as a ratio of total UK visits or per head of population), we tested 20 specifications for applications and 20 for visa issues for each of our four income groups.

The detailed results are presented in Appendix B. **The following general results emerge:**

- The results are very similar whether one looks at applications or issues.
- They are also similar whether one considers applications divided by total visits to the UK or applications per head of population.
- **Visa fees are often not statistically significant.** However, there are a *few* instances where visa fees are statistically significant at the 80% level or better, *generally for the lowest income group*. One would expect that the impact of increases in visa fees is largest for the lowest income countries. However, these instances are few and in most cases at least some of the other variables are not significant.
- **Income as proxied by GDP per capita is generally significant.**
- **The exchange rate is significant in about half the cases,** generally for the lowest and second highest income groups.
- **The trade variable is only significant for the lowest income group.** For the lowest income group, the share of business visa applications in total applications is probably higher than for the other groups. Since the trade variable essentially captures business links between the UK and the countries, it may be most appropriate for the lowest income group.
- When visa fees are expressed in sterling, in real terms, and the exchange rate is included as a separate variable, **we obtain satisfactory results for the lowest income group.** The implied quantitative impact is very small however: **a 100% increase in fees would lead to a 9% fall in applications.** In addition, this group in any case now accounts for less than 10% of all visa applications and of all visas issued. Moreover, we would need a broader base of positive results to be confident about the validity of even these results.

6. Conclusions

This study has rigorously assessed the available evidence of the impact of increases in visa fees on short-term visit visa applications and issues.

The analysis shows that there may be a statistically significant impact for very low income countries, although even here the impact appears to be very small. However, **these results are too narrowly based to conclude with confidence that increases in visa fees have a statistically significant negative effect *generally* on either applications for visas or visas issued once other factors are allowed for.**

Limited data availability may be one reason why one cannot unearth a statistically significant impact that in fact actually exists. There are in particular two limitations to the data set that is currently available. First, the time span covered is very short, with only two instances of increases in visa fees. As more data become available, it would be advisable to revisit the analysis, for instance including data subsequent to the April 2008 rise in fees. Second, only total application and issuance figures are available by country. Visa fees are likely to have different effects on business, VFR, study and leisure visits. Leisure visits are likely to be the most sensitive to increases in visa fees. However, in the sample of countries available where visa restrictions are applied by the UK, in most cases, business trips are likely to account for a large share of total applications and visas issued, and such trips could well be insensitive to the level of visa charges currently being imposed.

Although in general no statistically significant impact from the visa fee increases has been found, this does not rule out an impact existing – as many in the UK tourism industry believe on the basis of anecdotal evidence and their experiences. However, **this research does conclude that at the moment such an impact cannot be scientifically quantified.**

Appendix A

Countries included in the study

Lowest income quartile	2nd lowest income quartile	2nd highest income quartile	Highest income quartile
Dem Rep of Congo	Nigeria	China	Tunisia
Ethiopia	Sudan	Egypt	Dominican Republic
Burma	India	Syria	Fiji
Sierra Leone	Senegal	Morocco	Russia
Malawi	Pakistan	Albania	Jamaica
Tajikistan	Mongolia	Brazil	Cuba
Uganda	Yemen	Jordan	Turkey
Gambia	Cameroon	Iran	Lebanon
Zimbabwe	Armenia	Bosnia	Libya
Nepal	Azerbaijan	Colombia	Oman
Tanzania	Sri Lanka	Ecuador	Barbados
Iraq	Georgia	Turkmenistan	Saudi Arabia
Ghana	Guyana	Kazakhstan	Korea
Zambia	Philippines	Macedonia	Bahrain
Kenya	Indonesia	Thailand	Kuwait
Uzbekistan	Angola	Algeria	UAE
Vietnam	Ukraine	Peru	Qatar
		Serbia	

Countries with applications data but no visa requirements

Argentina	Czech Republic	Lithuania	Singapore
Australia	Denmark	Luxembourg	Slovakia
Austria	Estonia	Malaysia	South Africa
Barbados	Finland	Malta	Spain
Belgium	France	Mauritius	Swaziland
Belize	Germany	Mexico	Sweden
Bolivia	Greece	Namibia	Switzerland
Botswana	Hungary	Netherlands	Tajikistan
Brazil	Iceland	New Zealand	The Bahamas
Brunei	Irish Republic	Norway	Trinidad and Tobago
Bulgaria	Israel	Panama	United States
Canada	Italy	Papua New Guinea	Uruguay
Chile	Japan	Poland	Vanuatu
Croatia	Latvia	Portugal	Venezuela
Cyprus	Lesotho	Romania	

Countries with visa requirements but no applications data

Afghanistan	Equatorial Guinea	Moldova
Benin	Gabon	Montenegro
Bhutan	Guinea	Niger
Burkina Faso	Guinea Bissau	Nigeria
Burma (Myanmar)	Haiti	Oman
Burundi	Kosovo	Palestinian Authority
Cambodia	Kuwait	Rwanda
Cape Verde	Kyrgyzstan	Sao Tome & Principe
Central African Rep	Laos	Somalia
Chad	Liberia	Surinam
Comoros	Mali	Togo
Djibouti	Mauritania	Vatican City

Appendix B

Statistically significant variables (at the 80% level) with the right sign are denoted by a red 'OK'.

a) Results for visa applications (2004Q1-2008Q1)

Dependent variables: applications relative to total visits to the UK				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 1 (visa fees in real LC, with exch rate)				
Lowest inc group	Not significant	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 2 (visa fees in real LC, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 3 (visa fees in nominal LC, with exch rate)				
Lowest inc group	OK	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 4 (visa fees in nominal LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 5 (visa fees in real £, with exch rate)				
Lowest inc group	OK	OK	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign

Dependent variables: applications relative to total visits to the UK				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 6 (visa fees in real £, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 7 (visa fees in nominal £, with exch rate)				
Lowest inc group	OK	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign
Specification 8 (visa fees in nominal £, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 9 (visa fees as dummies, with exch rate)				
Lowest inc group	2007Q2 not sign	Not significant	OK	OK
2nd lowest inc group	2007Q2 not sign	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	2007Q2 wrong sign	OK	Not significant	Wrong sign
Specification 10 (visa fees as dummies, without exch rate)				
Lowest inc group	2007Q2 not sign	OK	na	OK
2nd lowest inc group	2007Q2 not sign	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	2007Q2 wrong sign	OK	na	Wrong sign

Dependent variables: applications per head of population				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 11 (visa fees in real LC, with exch rate)				
Lowest inc group	Not significant	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	Not significant	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 12 (visa fees in real LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 13 (visa fees in nominal LC, with exch rate)				
Lowest inc group	Wrong sign	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	OK	OK	Not significant	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 14 (visa fees in nominal LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	OK	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 15 (visa fees in real £, with exch rate)				
Lowest inc group	OK	OK	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign

Dependent variables: applications per head of population				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 16 (visa fees in real £, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 17 (visa fees in nominal £, with exch rate)				
Lowest inc group	OK	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	OK	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign
Specification 18 (visa fees in nominal £, without exch rate)				
Lowest inc group	OK	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 19 (visa fees as dummies, with exch rate)				
Lowest inc group	2007Q2 not sign	Not significant	OK	OK
2nd lowest inc group	2007Q2 not sign	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	2007Q2 wrong sign	OK	Not significant	Wrong sign
Specification 20 (visa fees as dummies, without exch rate)				
Lowest inc group	2007Q2 not sign	OK	na	OK
2nd lowest inc group	2007Q2 not sign	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	2007Q2 wrong sign	OK	na	Wrong sign

b) Results for visas issued (2004Q1-2008Q1)

Dependent variables: issues relative to total visits to the UK				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 1 (visa fees in real LC, with exch rate)				
Lowest inc group	Not significant	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 2 (visa fees in real LC, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 3 (visa fees in nominal LC, with exch rate)				
Lowest inc group	Wrong sign	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 4 (visa fees in nominal LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 5 (visa fees in real £, with exch rate)				
Lowest inc group	OK	OK	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign

Dependent variables: issues relative to total visits to the UK				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 6 (visa fees in real £, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 7 (visa fees in nominal £, with exch rate)				
Lowest inc group	OK	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign
Specification 8 (visa fees in nominal £, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 9 (visa fees as dummies, with exch rate)				
Lowest inc group	Not significant	Not significant	OK	OK
2nd lowest inc group	2007Q2 not sign	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	2007Q2 wrong sign	OK	Not significant	Wrong sign
Specification 10 (visa fees as dummies, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	2007Q2 not sign	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	2007Q2 wrong sign	OK	na	Wrong sign

Dependent variables: issues per head of population				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 11 (visa fees in real LC, with exch rate)				
Lowest inc group	Not significant	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	Not significant	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 12 (visa fees in real LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 13 (visa fees in nominal LC, with exch rate)				
Lowest inc group	Wrong sign	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	OK	OK	Not significant	Not significant
Highest inc group	Not significant	OK	Wrong sign	Wrong sign
Specification 14 (visa fees in nominal LC, without exch rate)				
Lowest inc group	Wrong sign	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	OK	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 15 (visa fees in real £, with exch rate)				
Lowest inc group	OK	OK	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign

Dependent variables: issues per head of population				
	Visa fees/dummies	Income	Exchange rate	Trade links
Specification 16 (visa fees in real £, without exch rate)				
Lowest inc group	Not significant	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 17 (visa fees in nominal £, with exch rate)				
Lowest inc group	OK	Not significant	OK	OK
2nd lowest inc group	Not significant	Not significant	Not significant	Not significant
2nd highest inc group	OK	OK	OK	Not significant
Highest inc group	Not significant	OK	Not significant	Wrong sign
Specification 18 (visa fees in nominal £, without exch rate)				
Lowest inc group	OK	OK	na	OK
2nd lowest inc group	Not significant	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	Not significant	OK	na	Wrong sign
Specification 19 (visa fees as dummies, with exch rate)				
Lowest inc group	2007Q2 not sign	Not significant	OK	OK
2nd lowest inc group	2007Q2 not sign	Not significant	Not significant	Not significant
2nd highest inc group	Not significant	OK	OK	Not significant
Highest inc group	2007Q2 wrong sign	OK	Not significant	Wrong sign
Specification 20 (visa fees as dummies, without exch rate)				
Lowest inc group	2007Q2 not sign	OK	na	OK
2nd lowest inc group	2007Q2 not sign	Not significant	na	Not significant
2nd highest inc group	Not significant	OK	na	Not significant
Highest inc group	2007Q2 wrong sign	OK	na	Wrong sign