ORIGINAL ARTICLE

Love Is Not all you Need: Income Requirement for Visa Sponsorship of Foreign Family Members

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Abstract
In this paper, we explain conceptually how income requirements for citizens of a country to sponsor visas of foreign family members discriminate against certain groups of the population. Then, we analyse the case of an annual income requirement of £18,600 adopted by the UK Government in 2012 to sponsor visas of non-EEA partners and children in order to show the degree to which the policy discriminates against women and ethnic minorities. Results suggest that, controlling for relevant socio-demographic characteristics, British working women are 30 percentage points less likely to earn enough to sponsor a non-EEA partner compared to males, while working British ethnic minorities are 7 percentage points less likely to earn enough compared to the British White group. In order for the income requirement to have the same impact on men and women's ability to sponsor their partner, it would in theory be necessary to reduce the annual income threshold to £15,550 for British women and raise it to £24,600 for British men. Given the conceptual problems with such an approach, we also explore whether there are other ways to reduce the indirect discriminatory effects of the threshold. Specifically, we show that the practice of not accounting for the potential earnings of the non-EEA spouse in the UK when considering visa applications likely penalises women more than men.

Keywords Immigration · Visas · UK

JEL Classifications J15 · J16 · F22

Introduction

In this paper, we examine the question of whether and how income-based immigration policies can have a discriminatory impact. In order to do so, we explore a minimum annual income requirement of £18,600 that British citizens and settled residents have to meet since 2012 if they wish to bring their spouse or partner to live with them from outside the European Economic Area (EEA). This was over a 200% increase on the previous threshold of £5500 (Sirriyeh 2012).

Immigration policies are designed to select and exclude and, as such, they must all discriminate in some fashion.

Legal definitions of discrimination typically distinguish between direct and indirect discrimination, where direct discrimination involves treating someone differently explicitly because they have a particular protected characteristic (e.g. age, disability, gender, race, or sexual orientation). Indirect discrimination involves measures that may not be specifically designed to discriminate but that have the effect of putting someone with a protected characteristic at a disadvantage (Advisory, Conciliation and Arbitration Service 2013).

Indirect discrimination is not necessarily unlawful. For example, under the UK's Equality Act 2010, employers are allowed to adopt a practice that is indirectly discriminatory if they have the 'objective justification' that the practice is a 'proportionate means of achieving a legitimate aim' (Broughton et al. 2016). For example, inflexible working hours may discriminate against women with childcare responsibilities (Budig and England 2001), but may still be justifiable if the demands of a business or its customers require the work to be performed at a set time. The Equality Act 2010 prohibits discrimination without objective justification, although there is an exemption for the 'exercise of immigration

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and nationality functions' that allows the government to discriminate between people of different citizenship or ethnic/national origins.

Immigration policies involve both direct and indirect discrimination. Direct discrimination takes place on the basis of citizenship, including as a result of reciprocal agreements with other countries to offer immigration benefits to each other's citizens. For example, Australian citizens are eligible for a 2-year Youth Mobility work visa in the UK but US citizens are not; European Union (EU) citizens have rights to free movement in the UK and most non-EU citizens do not. Direct discrimination also takes place on the basis of immigration status, after migrants enter the country (Spencer and Pobjoy 2012).

This paper deals with indirect discrimination. This form of discrimination is found throughout the immigration system, which sets many different criteria for eligibility to enter or remain in a country that some groups of potential applicants are more likely to be able to meet than others. For example, the UK's main work visa (known as Tier 2) currently requires people to be working in a graduate job that in most cases must pay at least £30,000 per year. Meeting the Tier 2 income threshold will be harder for groups of people who tend to earn less, such as women. Indeed, the majority of labour migrants to the UK are men (Blinder 2017).

The fact that indirect discrimination exists in the immigration system is not in itself surprising. The more difficult questions arise when considering when and to what extent such discrimination is justifiable in the pursuit of the government's broader policy goals, and what to do if it is not.

Immigration policies accommodate different and not always compatible objectives, including economic growth, protecting the rights of the individual (including the right to family life), fostering a sense of national identity or community, and responding to the concerns of voters (Hampshire 2013). Policymakers might be expected to be less sensitive to the risk of discrimination arising from income-based eligibility criteria when designing labour migration policies whose main purpose is explicitly economic, than they are when designing family migration policies whose goals include preserving the integrity of the family and promoting individual rights to family life. In other words, not admitting an applicant because they are not a net fiscal contributor is an unremarkable choice in the case of labour migration policy, but potentially more controversial in policy towards family migration. Family migration also differs from other types of migration because the impact of policies is felt not just by the migrants themselves or their employers, but also largely by members of the host-country population seeking to live together with their family members.

In this paper, we explore immigration policy discrimination focusing on the income requirement for citizens to sponsor visas of foreign family members. Our analysis is focused on the UK, which is an important case because it has particularly restrictive family migration policies (Huddleston 2012). However, income requirements are now commonly used across industrialised countries, and the OECD (2017) has pointed to a trend of tightening income requirements over time. Because the demographic characteristics we examine in this paper that are associated with lower earnings (i.e. being female or a member of a certain ethnic minority) are widespread across high-income countries, the results are potentially relevant for all immigration systems that impose income or minimum-resource thresholds for family migration.

Immigration is one of the hottest political topics in the UK and it has been suggested that concerns related to immigration were one of the key drivers behind the Brexit vote (Goodwin and Heath 2016). During the 2010 general election, the Conservative party pledged to reduce net migration to the UK 'from the hundreds of thousands to the tens of thousands' (Vargas-Silva 2014). Immigration from EEA countries to the UK is largely unrestricted given the EU freedom of movement policies. Therefore, the UK Government focused on reducing immigration from outside the EU. In an effort to decrease net migration, the UK Government restricted the three main routes of non-EEA immigration into the UK: work, study, and family (Vargas-Silva 2014).

The restrictions on family migration were particularly controversial as they imposed substantial constraints on the rights of UK citizens to bring non-EEA family members to live with them in the country (Sumption and Vargas-Silva 2016). The new income threshold for family migration contributed to the UK being ranked as one of the most restrictive high-income countries towards family migrants in the Migrant Integration Policy Index (MIPEX) index (MIPEX 2015). At the moment of its introduction, the income threshold was higher than those in all other major Western economies, besides Norway (Huddleston 2012).

In the empirical analysis, we first explore what share of the UK population is excluded from bringing a partner to the country, and how this exclusion rate varies across groups, putting emphasis on differences across gender and ethnicity lines. We also illustrate how large this gap is by showing how different the income thresholds for men vs. women would need to be in order to have the same impact on the likelihood of being able to sponsor a spouse. We do this by calculating illustrative gender-specific income thresholds which result in the same threshold to average income ratio across genders and that are as restrictive as the original policy. The purpose of estimating these differentiated thresholds is not to advocate their use, which would clearly be discriminatory in its own right, but to highlight the degree to which a threshold would have to be adjusted in order for the gender gap to disappear. Finally, we explore the implications of the policy of not taking into account the future earnings of the non-EEA spouse for visa purposes.

Our analysis suggests that British working women are 30 percentage points less likely to earn enough to sponsor a non-EEA partner compared to males, while working British ethnic minorities are 7 percentage points less likely to earn enough compared to the British White group. The analysis also suggests that in order to operate a policy that did not discriminate across genders in this way, there would in theory need to be a threshold of £15,550 for British females and £24,600 for British males.

Finally, we examine the impact of the policy choice of not taking into account the prospective income of non-EEA spouses being sponsored. We find that male family migrants from outside the EEA have much higher employment rates that their female counterparts. Also, the likelihood of employment of non-EEA male family migrants increases quickly and it is significantly higher than that of comparable natives, but that female non-EEA family migrants likelihood of employment is always below that of UK-born native women. These results suggest that not taking into account the future earnings of the non-EEA spouse has a greater effect on the eligibility of UK sponsors who are women, since their partners are more likely to have earnings in the future.

The rest of the paper is as follows. The next section explains the use of income thresholds for family migration around the world. 'The UK income threshold' section provides an overview of the UK income threshold for the sponsorship of family visas. 'Data' section presents the data used in the paper as well as the methodological approach. 'Results for the share affected by the income threshold' section presents the results for the income threshold, 'Thresholds differentiated by gender' section presents the results for differentiated income thresholds by gender, while 'The outcomes of the non-EEA family migrant' section presents the results for the employment outcomes of non-EEA family migrants. Finally, 'Conclusion' section concludes.

Income Thresholds: Purpose and Use Around the World

Income requirements for family immigration are commonly used in high-income countries. In a recent review, the OECD noted that they were generally 'based on the idea of preventing benefit dependency and poverty' (OECD 2017). Income thresholds are also frequently part of a package of eligibility criteria designed to prevent the admission of family members who have poor integration prospects, most notably language requirements imposed either at entry or on renewal of a spouse residence permit (OECD 2017).

The characteristics of the income requirement (e.g. level, welfare participation) vary across countries. For example, in the Netherlands, the sponsor or their spouse must usually earn at least the statutory minimum wage; in the USA, the household income must be at least 125% of the poverty level, and Norway has a fixed income threshold which is—like the one in the UK—designed to enable the couple to live without relying on welfare benefits (OECD 2017). Denmark and Norway both require that the sponsor has not received income-related benefits in the past year, while Ireland has both an income threshold and a requirement that the sponsor should not have been 'predominantly' reliant on benefits for over 2 years (Irish Naturalisation and Immigration Service 2016). In other countries (e.g. Switzerland and Germany), there is no explicit financial threshold but a more discretionary requirement for the sponsor to show that they have 'sufficient resources' to cover living expenses and housing for the family.

The UK Income Threshold

Changes to family migration rules were initially explicitly presented by the UK Government as part of a strategy to reduce net migration (Home Office 2010). Family migration has a substantial impact on net migration as family migrants are less likely to leave the country after a few years compared to other groups, such international students or work visa holders (Home Office 2016).

However, the changes to family migration were also justified in financial terms and as a means to ensure that migrants coming to the country had the potential to integrate effectively. In 2011, before deciding on the level of the new threshold, the UK Government conducted a consultation on proposed changes to family migration rules, where it stated that the purpose of the income requirement was to 'ensure that migrants are supported at a reasonable level that ensures they do not become a burden on the taxpayer and allows sufficient participation in everyday life to facilitate integration' (Home Office 2011a). A 2012 governmental impact assessment prior to the introduction of the income threshold focused on these latter objectives and put less emphasis on numbers, describing the potential reduction in net migration as 'a welcome additional benefit' (Home Office 2012).

The main rules implementing the family income threshold have remained mostly unchanged since 2012. UK citizens and long-term residents applying to bring a non-EEA partner or spouse to live with them in the UK have had to meet a minimum income requirement of £18,600 per year before tax. For applicants who are also bringing dependent children who are not already UK citizens, the post-2012 threshold rises by £3800 for one child and £2400 for each additional child. Data analysis conducted by the UK Home Office suggested that more than 90% of applications were for a spouse/partner alone with no children, and would thus face the £18,600 level (Home Office 2011a).

Another key feature of the income requirement is that it must be met by the UK sponsor alone. Applicants cannot rely

on offers of support from family members or other third parties. The non-EEA partner's earnings cannot be taken into account if they are working abroad or if they have a job offer in the UK but do not already have work authorisation. Partners who are already working legally in the UK can count their income towards the threshold. However, securing work authorisation in order to do this is not straightforward, as UK labour migration policies are relatively restrictive; there are few opportunities for work authorisation outside of graduate-level employment paying at least £30,000 per year (or higher in many cases) with a licenced sponsoring employer (Sumption and Fernandez-Reino 2018). In practice, the large majority of people granted visas apply from outside the UK, and thus would not be able to have their income taken into account.[1] The exclusion of spousal income means that where a single-earner couple is living overseas and wants to move to the UK, if the UK citizen sponsor is not working, they are unlikely to meet the income threshold without first finding qualifying work in the UK.

Applicants who have cash savings can make up for a shortfall in earnings if the cash savings are at least £16,000 plus 2.5 times the shortfall. So, for example, someone with an income of £17,600 would require £18,500 in savings (= £16,000 + £2500). People without income can qualify if they have cash savings of at least £62,500. The threshold does not apply to EEA citizens, whose free movement rights under European law allow them to bring non-EEA spouses with them.[2]

Calculation of the Income Threshold

Before implementing the income threshold, the UK Government asked the Migration Advisory Committee (MAC)—an independent body of academics that advises the government on migration issues—to advise on a threshold that, from a purely economic perspective, would allow sponsors to support their partners 'independently without them becoming a burden on the State' (MAC 2012). It was not asked to take into account other economic or non-economic objectives, such as the well-being of UK citizens or settled residents applying for family unification or that of their children.

A key question for the MAC was what constitutes a 'burden on the state,' since there is no clear definition of this concept. The MAC laid out three possible approaches to thinking about minimum income levels: (1) whether the person receives a given absolute level of pay, such as the salary from a full-time job at the minimum wage; (2) whether the

person's net contribution to the public purse is positive or negative; and (3) whether the person is receiving any means-tested welfare benefits.

These different measures and different options for calculating them led to different income thresholds, ranging from £13,400 to £36,200 under different assumptions and methods, which would have had vastly different impacts on UK citizens' eligibility to sponsor a non-EEA partner. The £18,600 threshold that the government ultimately selected was calculated as the point at which a couple with no children and only one partner working becomes ineligible for tax credits or housing benefit, assuming they paid rent of £100 per week.[3]

It is not clear that the question the MAC was asked—to provide a single income amount below which someone becomes a 'burden on the state'—can actually be answered in a meaningful way. First, if the 'burden' a person or couple imposes is interpreted as being related to their net fiscal impact, the actual point at which they turn from being a net fiscal cost to net fiscal contributor will vary widely depending on personal circumstances. Couples where both partners are working are more likely to be net contributors than couples with only one earner, and the costs of benefits and public services (e.g. education) will depend on whether they have dependent children and how many. These things will vary over the course of the life cycle. Second, the idea of a "burden" implies that a person would impose a *significant* cost rather than simply the absence of a net fiscal contribution; how large the cost has to be to be considered significant is a matter of judgement.

In summary, the level at which the threshold should be set is not empirically or conceptually obvious, there are several different options, and that there is a strong element of choice on the part of the government.

Legal Challenges to the Income Threshold

After its introduction, the family income threshold was challenged in the UK courts. In 2013, the High Court ruled that the family income requirement was not unlawful and that the aims of the policy were legitimate. However, it ruled that the full package of requirements—including not just the level at which the threshold was set but also the fact that non-EEA spouses' future income or credible offers of support from third parties could not be taken into account—was disproportionate and unlawful. It identified some 'less intrusive' policy options, such as reducing the income requirement to £13,500

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[1] For instance, in 2016, the Home Office granted 37,344 new partner visas, of which 77% were to people applying from outside of the UK and only 2100 or 6% of new family visas were granted to people who already held a UK work visa (Home Office 2018b).

[2] See Kilkey (2017) and Vargas-Silva (2016) for a discussion of how this might change after Brexit.

[3] Note that the relevance of this number when assessing who is a 'burden on the state' is not obvious, since it indicated gross benefits receipt rather than net impact on the tax and benefits system or net fiscal impact. Since UK tax credits and housing benefit are in-work benefits that taper off as earnings rise, a person earning just below the threshold could—depending on their family situation and their use of public services like health or education—receive a small amount of in-work benefit while still paying enough income and other taxes to remain a net contributor to public finances overall. It would be hard in such a case to argue that they were a burden on the state.

or thereabouts (around the level of a full-time minimum wage job at the time), permitting savings of less than £16,000 to supplement income, and allowing spousal income or third-party support to count towards the threshold (High Court 2013).

This decision was overturned in 2014 by the Court of Appeal (Court of Appeal 2014). In 2017, the Supreme Court confirmed the position of the Court of Appeal, ruling that the income requirement was not unlawful. However, it said that where people did not meet the income requirement, the government needed to consider whether they should be admitted anyway (i.e. outside of the immigration rules) to protect their rights to family life—and that in these cases broader sources of income or support should be considered (Immigration Law Practitioners' Association 2017).

The government did not change the income threshold between its introduction and the Supreme Court judgement in early 2017. In August 2017, it introduced rule changes to implement the Supreme Court decision. This included the possibility for certain applicants to meet the income threshold using forms of income that would not otherwise be accepted (such as offers of support from third parties or a job offer made to the non-EEA spouse); however, applicants can only rely on these sources under limited circumstances where there are considered to be separate, human rights grounds for granting entry (Desira 2017). The Conservative Party's manifesto for the May 2017 election stated that the income threshold would be raised, although at the time of writing this change had not been implemented.

Changes in Family Visa Applications and Grants over Time

Even before the introduction of the minimum income requirement, the number of entry visas granted to non-EEA partners had been declining for several years. Comparable visa data are available since 2006. They show that visa grants to partners peaked in the year ending June 2007 at 49,800, falling to 33,900 in the year ending June 2012, immediately before the income threshold was introduced. It is difficult to disentangle the effects of changing demand for family visas from policy factors. However, some of the pre-2012 decline may be attributable to policy changes, including a temporary increase in the age requirement for spousal visas and new language requirements introduced in 2010 (Home Office 2018a).[4]

The introduction of the family income threshold was followed by a sharper decline in visa grants than had been seen in previous years (a decrease of 9388 visas making for a 28% decline year on year). Official immigration statistics do not provide any information on the characteristics of the

sponsor (e.g. ethnicity or gender). However, a separate data source on passenger admissions at the border does provide a gender breakdown for spouses and fiancés. These data show that the majority of non-EEA citizens admitted to the UK as partners are women, i.e. in the vast majority of cases are sponsored by men; this share averaged 68% from 2004 to 2016.[5]

As show in Fig. 1, the share of partners who are female increased markedly around the same time that the income threshold was introduced. On average, 67% of spouses and fiancés entering the UK from 2004 to 2011 were women. In 2013, the share of female applicants rose sharply to 75%, and averaged 75% from 2013 to 2016.

Data

The empirical analysis is based on data from the UK Quarterly Labour Force Survey (LFS), the largest household survey in the country, for the period 2012–2017. The LFS interviews individuals for five consecutive quarters, but we only keep individuals in their first interview (i.e. wave 1) to avoid repeating the same individuals in the analysis. The sample is limited to respondents who are UK citizens aged 18 to 65, the main group restricted by the minimum income requirement. We present results with the full sample and limiting the analysis to those currently in work.

The samples used in the paper exclude self-employed individuals as earnings data are not available for this group. It is difficult to determine how this restriction affects the different groups as there is no data available on earnings from self-employment that covers the range of demographic information that we need for the analysis. However, from the LFS, we know that 19% of British males in employment are in self-employment, compared to 10% for British females. The self-employment shares are closer across ethnic lines with 14% of employed White British being in self-employment compared to 16% of ethnic minorities.

The empirical analysis has three parts. First, it shows the degree to which the actual income threshold is more likely to affect women and ethnic minorities. In this part, we also show the potential consequences of using an alternative income threshold based on the earnings from a full-time job at the minimum wage. As suggested by Table 1, the UK minimum wage changes annually and it has increased substantially in recent years. Second, we provide a theoretical illustration of a differentiated income threshold that has a similar impact on spousal sponsorship rights of different groups, using gender as an example. Third, we discuss the gender implications of taking into account the income of the non-EEA spouse in order to meet the threshold or evaluate their economic contribution to society more generally.

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[4] The age requirement for spousal visas increased from 18 to 21 years from 2007 to 2011 when it was struck down by the Supreme Court.

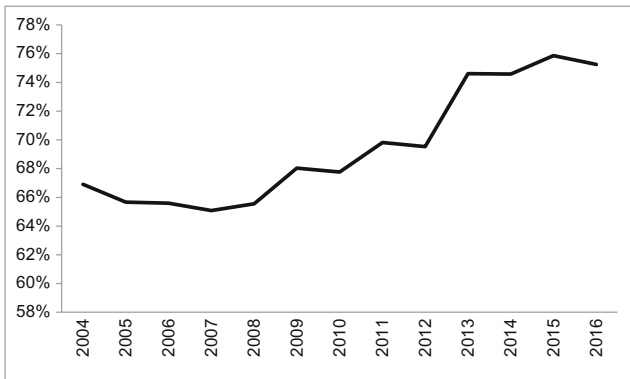[5] Civil partnerships are excluded from these figures.

Fig. 1 Share of spouses and fiancés admitted to the UK who are female. Source is Home Office (2018b)

Share Affected by the Income Threshold

In this part of the analysis, the main dependent variable is a dummy equal to 1 if the person does not earn enough to sponsor a non-EEA partner to move to the UK (i.e. earns less than £18,600 per year). Annual earnings are extrapolated from the information on weekly earnings in the survey. We start by constructing a dummy variable (T_i) for not meeting the threshold as follows:

$$T_i = \begin{cases} 1 \text{ if } y_i < \tau \\ 0 \text{ if } y_i \geq \tau \end{cases} \tag{1}$$

where y_i is the annual income of the worker and τ is the income threshold. For those inactive or unemployed, we assume that $y_i = 0$. As suggested by column 1 of Table 2, for the whole period close to 62% of UK citizens did not earn enough to sponsor a non-EEA partner. Among those in work, this share was 42% (column 2). However, as suggested by Fig. 2, the share of UK citizens who cannot sponsor a non-EEA partner to move to the UK under the current threshold has been decreasing over time. This share was 65% in 2012, but the income threshold has been kept fixed in nominal terms

Table 1 Rate of the UK minimum wages across quarter/year and age groups

Quarter – Year	Age group		
	25+	21–24	18–20
Q2 2017–Q4 2017	£7.50	£7.05	£5.60
Q4 2016–Q1 2017	£7.20	£6.95	£5.55
Q2 2016–Q3 2016	£7.20	£6.70	£5.30
Q4 2015–Q1 2016	£6.70	£6.70	£5.30
Q4 2014–Q3 2015	£6.50	£6.50	£5.13
Q4 2013–Q3 2014	£6.31	£6.31	£5.03
Q4 2012–Q3 2013	£6.19	£6.19	£4.98
Q1 2012–Q3 2012	£6.08	£6.08	£4.98

at £18,600, while earnings have grown over time.

The analysis also looks at the implications of using an alternative income threshold equal to the earnings from a full-time job that pays the minimum wage. As reported in Table 2, that type of threshold would have resulted in close to 26% of working British citizens not being able to sponsor a partner from outside the EEA for the whole period. Interestingly, as a result of the increase in the minimum wage over time, the actual and hypothetical minimum wage thresholds have been getting closer (see Fig. 2). However, in 2017, there was still a 12 percentage point gap between the two thresholds in the share who would qualify for sponsorship.

Table 2 also suggests that there is substantial variation in the share of individuals who cannot meet the income threshold across genders and ethnicity groups. For instance, 73% of females cannot meet the threshold compared to 49% of males, a gap of 24 percentage points. Along ethnic lines, the descriptive statistics suggests that some groups are in a similar position to the White British majority, while others are in a worse position. In particular, 61% of ethnic Indian British citizens cannot sponsor a non-EEA spouse, about the same share as the White British.[6] On other hand, 83% of ethnic Pakistani British citizens do not earn enough to sponsor a non-EEA spouse. These ethnic gaps remain significant if we focus on individuals who are in work.

In order to explore these gaps further, we estimate a series of linear probability models along the following lines:

$$T_i = \gamma p_t + \delta R_j + \beta X_i + \varepsilon_i \tag{2}$$

where p_t are year dummies with 2012 as the base year, R_i are regional dummies with London as the base region, and X_i represent a series of socio-demographic characteristics. The socio-demographic characteristics included in the estimation are age, education, gender, and ethnicity. Columns 3 and 4 of Table 2 report the descriptive statistics of these variables. In the discussion of the results, we focus on discussing the implications of the income threshold across the gender and ethnic dimensions. We also show estimations including interactions between the gender and ethnicity dummies. Appendix 1 contains the definitions of all the variables used in the estimation.

Differentiated Income Thresholds

In the second part of the paper, we focus on exploring the possible characteristics of a differentiated threshold which would have a similar impact on different groups of society, putting emphasis on gender, which is one of the characteristics that most affects eligibility. We do this as a theoretical illustration, and not in order to propose that such a policy should

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[6] Please note that Indians, Blacks, and Pakistanis represent the two major minority ethnic groups as categorised in the UK LFS.

Table 2 Share not meeting the thresholds by key characteristics and descriptive statistics of key independent variables

Variable	Not meeting actual threshold (%)		Not meeting MW threshold (%)		Descriptive statistics			
					All		In work	
	All (1)	In work (2)	All (3)	In work (4)	Mean (5)	SD (6)	Mean (7)	SD (8)
All	61.9%	41.7%	51.5%	25.7%				
Female	72.6%	55.6%	61.5%	37.7%	0.5562	0.4968	0.5269	0.4993
Male	48.6%	26.2%	39.0%	12.4%	0.4438	0.4968	0.4731	0.4993
White British	61.3%	41.7%	50.6%	25.6%	0.8987	0.3018	0.9144	0.2798
Non-White British	67.7%	41.5%	60.0%	27.5%	0.1013	0.3018	0.0856	0.2798
Indian	60.9%	37.5%	52.1%	23.5%	0.0205	0.1416	0.0196	0.1388
Black	64.1%	38.9%	55.7%	24.8%	0.0200	0.1401	0.0181	0.1331
Pakistani	83.2%	54.3%	76.7%	36.6%	0.0156	0.1241	0.0088	0.0934
Other ethnics	67.1%	41.8%	59.7%	28.7%	0.0452	0.2077	0.0391	0.1939
Higher degree	40.9%	24.4%	32.9%	14.1%	0.3523	0.4777	0.4217	0.4938
A levels	65.2%	48.0%	52.5%	29.0%	0.2324	0.4223	0.2382	0.4260
GCSE	72.4%	56.7%	59.2%	35.9%	0.2277	0.4194	0.2224	0.4158
Other/No edu	84.7%	62.6%	76.1%	41.6%	0.1876	0.3904	0.1178	0.3223
Scotland	62.6%	41.4%	51.9%	24.5%	0.0898	0.2860	0.0878	0.2830
Wales	67.6%	46.6%	56.3%	27.9%	0.0510	0.2199	0.0473	0.2124
South West	62.5%	45.1%	51.1%	28.5%	0.0893	0.2852	0.0935	0.2912
South East	55.8%	36.8%	46.5%	23.5%	0.1357	0.3424	0.1453	0.3524
London	56.2%	28.6%	50.3%	18.9%	0.0905	0.2870	0.0850	0.2789
East	58.3%	38.4%	49.0%	24.5%	0.0953	0.2937	0.0987	0.2982
West Midlands	65.3%	44.0%	54.5%	26.6%	0.0843	0.2779	0.0799	0.2712
East Midlands	62.6%	43.7%	51.3%	26.6%	0.0823	0.2748	0.0837	0.2769
Yorkshire	64.7%	46.4%	53.1%	28.9%	0.1032	0.3042	0.1042	0.3056
North West	64.8%	45.1%	53.1%	27.0%	0.1273	0.3334	0.1253	0.3311
North East	68.1%	49.1%	55.7%	29.1%	0.0512	0.2203	0.0490	0.2160
Age					42.92	13.79	41.79	12.18
Observations					194,071	194,071	126,717	126,717

Estimated using UK LFS End User Licence data for 2012–2017. Please see the Data Appendix for definition of variables. The sample only includes UK citizens

be introduced (indeed, introducing different thresholds for different groups would in itself be discriminatory). For
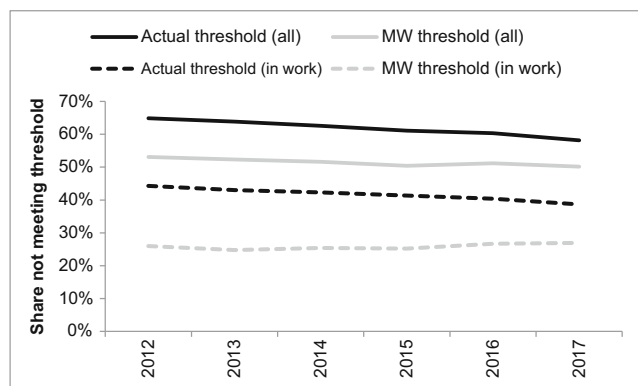

Fig. 2 Change over time in share not meeting the thresholds. Estimated using UK LFS End User Licence data for 2012–2017

simplicity, we assume that the policy goal is for the threshold to be restrictive in terms of the number of people who cannot sponsor a foreign spouse.

As explained in 'Income thresholds: purpose and use around the world' section, the UK income threshold was introduced as part of a suite of policies by the Government to reduce net migration. In 2012, 44% of the British citizens in work were unable to sponsor a spouse to the UK based on their earnings, but that figure decreased over time as the threshold remained fixed in nominal terms. As an illustration, we use the share of workers unable to sponsor someone in 2012 (i.e. 44%) as a proxy for the overall intended restrictiveness of the policy and explore differentiated income thresholds that would restrict 44% of the British workforce from sponsoring a non-EEA spouse, but that are more neutral in gender terms. Note that this 44% is used as a proxy for restrictiveness and not as an explicit policy objective of the UK

Government. The analysis below is still relevant if the share restricted is 30% or 60% of the workforce. The key point is that a given share of the population is restricted from sponsoring a spouse and that a more restrictive policy in terms of numbers would imply a higher share. In the analysis, we assign different thresholds to each gender and look for a threshold that meets two conditions: the threshold restricts 44% of the UK workforce from being a sponsor and threshold to income ratio is the same across genders. These conditions are represented by Eqs. 3 to 5:

$$T_{fi} = \begin{cases} 1 \text{ if } y_{fi} < \tau_f \\ 0 \text{ if } y_{fi} \geq \tau_f \end{cases}, T_{mi} = \begin{cases} 1 \text{ if } y_{mi} < \tau_m \\ 0 \text{ if } y_{mi} \geq \tau_m \end{cases} \quad (3)$$

$$\frac{\sum_{i=1}^{F} T_{fi} + \sum_{i=1}^{M} T_{mi}}{F + M} = 0.44 \quad (4)$$

$$\frac{\tau_f F}{\sum_{i=1}^{F} y_{fi}} = \frac{\tau_m M}{\sum_{i=1}^{M} y_{mi}} \quad (5)$$

where $T_{fi}(T_{mi})$ is the dummy for meeting the required income threshold for a given working female(male), $y_{fi}(y_{mi})$ represents the income for a given female(male), $\tau_f(\tau_m)$ is the income threshold for females(males), and $F(M)$ is the number of females(males) who are currently working.

The Employment Outcomes of Non-EEA Family Migrants

As explained in 'The UK income threshold' section, the income threshold takes no account of the (potential) economic contribution of the non-EEA migrant moving to the UK. The argument given by the UK Government is that there is uncertainty related to whether that potential contribution would be materialised or not. However, if that potential contribution were taken into account, it would also vary substantially by factors such as gender. In the analysis, we explore the employment outcomes of non-EEA family migrants to shed light on this issue.

In order to explore this aspect, we make use of a separate dataset, the secured version of the LFS (Office for National Statistics 2018), which has a variable that identifies those who migrated for family reasons to the UK.[7] We focus on those family migrants who arrived in the UK at 18 years of age or later and were born in non-EEA countries.[8]

In the analysis, we initially explore how the employment rates of non-EEA female family migrants compare to those of

their male counterparts, paying particular attention to the role of time in the UK. If there is a large employment gap across genders over time, it is possible to argue that the restriction on counting spousal income towards the threshold has a disproportionate effect across genders. We exclude from the estimation those who have been in the UK for 27 years or more as the analysis is less relevant for long-term residents, and the sample size for that group is limited.

In a second step, we explore how the employment rates of family migrants compare to those of comparable UK-born individuals in the LFS. In order to do this, we limit the sample to non-EEA family migrants and UK-born respondents and estimate a linear probability model along the following lines:

$$W_i = \theta \text{TGUK}_i + \gamma p_t + \delta R_j + \beta X_i + \varepsilon_i \quad (6)$$

where W_i is the employment dummy and TGUK are dummies indicating time since migration grouped in 3-year periods (i.e. 0–2, 3–5, etc.). These dummies are set to zero for those born in the UK. The θ coefficients provide information on the integration of non-EEA family migrants over time. The estimations are conducted separately for females and males, and we plot these coefficients for easier representation.

Ideally, we would have liked to conduct an examination of earnings for non-EEA family migrants. However, the information on earnings is only included in two of the five waves of the LFS, which means that we only have information on 40% of those in employment (and also excluding the self-employed, as there is no earnings information for that group). Given the focus on non-EEA migrants who came for family reasons, the sample is just too small for appropriate analysis of earnings.

Our analysis for this part relies on 24 cross-sections, and while we are mindful of the fact that the estimations are, as such, not adjusted for possible cohort specific differences and we cannot account for those within each cohort that have returned to their country of origin, it is still possible to identify interesting differences across genders. Note that we focus on recent and long-term migrants as the concept of being a "burden" on the state applies over the length of residence of individuals in the country.

Results for the Share Affected by the Income Threshold

Table 3 presents the results from estimating Eq. (2) for the full sample (i.e. employees, unemployed, and inactive). Looking at column 1 which reports the estimates for the actual threshold, the estimates suggest that females are 24 percentage points more likely to be unable to sponsor a spouse compared to males, while ethnic minorities are 9 percentage points more likely to be unable to sponsor a spouse compared to British

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[7] Please note that this is the only analysis in the paper which relies on the secured version of the LFS, the rest of the analysis uses the End User Licence.
[8] The large majority of adult migrants are likely to have migrated for marriage-related reasons, since family unification provisions for adult relatives in the UK are very limited (Yeo 2017).

Whites. Looking at column 2, it seems that this is the case for all ethnic minority groups, but the gap is bigger for Pakistanis (16 percentage points). Note that the coefficients are positive and significant for Indians, a group that has a smaller unconditional value for this variable relative to the White British. Table 7 in Appendix 2 replicates this analysis focusing on those who are single. The gender gap is smaller for the single group but the overall dynamics remain the same.

Columns 4 to 6 of Table 3 present the results for an income threshold that uses the earnings from a full-time job which pays the minimum wage. Overall, this alternative threshold has only a small impact on the gender and ethnic gaps for the full sample. In fact, the ethnic gap increases slightly with this alternative threshold.

Table 4 presents results from estimations in which we limit the sample to those who are currently working (excluding the self-employed).[9] There are some key differences with the results in Table 3. First, as shown in column 1 of Table 4, the gender gap is substantially larger (30 percentage points), while the ethnic gap is slightly smaller (7 percentage points). Moreover, in this case, the threshold based on a full-time minimum wage job (see columns 4 to 6) does result in a reduction in the gender and ethnic gap, even if a small one.

Thresholds Differentiated by Gender

The previous section suggests that there is a substantial gender gap related to the income threshold to sponsor non-EEA family members. In this section, we explore the degree to which the threshold would have to be differentiated in order to be gender 'neutral'. Whether the threshold should in practice be differentiated across genders (or in relation to other factors such as ethnicity or location) depends on the goals of the policymakers. We are not advocating the adoption of this type of policy. As explained above, we consider a gender neutral threshold to be one in which the policy is as restrictive as the actual threshold, but in which the threshold to income ratio is the same across genders (see Eqs. 3 to 5).

As shown in Table 5, a gender-differentiated threshold would imply a threshold of £15,550 for females and a threshold of £24,600 for males. Compared to the actual threshold, this implies a reduction of £3050 in the threshold for females and an increase of £6000 in the threshold for males. The threshold to income per capita for female (male) workers would decrease (increase) from 0.91 (0.57) to 0.76 under these new thresholds. Also, while in the actual threshold 56% of

working women cannot be sponsors, this would be the case for 45% of working women under the new threshold.

The same analysis could in theory be applied to the different ethnic groups to come up with a threshold that will equalise the impact of the policy in relative terms. Obviously, evaluating a differentiated income threshold in ethnic terms is more complicated, as there are a larger number of groups. In addition, as discussed above, the Government justified the income threshold in economic terms, as reducing the likelihood that a new migrant will impose a burden on the state. While we focus on restrictiveness related to migration numbers, a similar analysis could be applied to a determined target level of (average) contributions to public finances as the goal of the policy. For instance, it is possible to have different income thresholds in order to ensure that the threshold to average income is the same across genders and that the expected average fiscal impact of the non-EEA spouses is zero.

The Outcomes of the Non-EEA Family Migrant

As explained in 'The UK income threshold' section, the income threshold ignores the potential contributions of the non-EEA citizen moving to the UK, but there have been arguments from campaigners in favour of taking that potential contribution into account. The MAC also argued that there was a 'strong case', in principle, for taking account of the sponsored spouse's future earnings, because these earnings would affect the couple's fiscal impact. The effect of taking into account that potential contribution is likely to be different for men vs women. In this section, we explore the employment outcomes of non-EEA family migrants to shed light on this issue.

Figure 3 reports the employment rates of non-EEA family migrants by length of residence in the UK. At any point, the employment rates of non-EEA male family migrants are much higher than that of their female counterparts. The gap decreases over time, but even after 24 to 26 years in the UK, the employment rate gap between the two groups remains 23 percentage points.

Another possible analysis of the gap on earnings is to compare female family migrants with UK-born females and male family migrants with UK-born males. In order to do this, Fig. 4 plots the coefficients of the time-in-the-UK dummies from estimating Eq. 6. These coefficients provide a comparison of the likelihood of employment of non-EEA family migrants relative to the UK-born, controlling for relevant factors such as education, age, and location. As shown in Fig. 4, both female and male non-EEA family migrants have lower employment rates than their UK-born counterparts upon arrival. However, the likelihood of employment of male family migrants increases quickly and it is significantly higher than that of comparable natives. On the other hand, female non-EEA family migrants' likelihood of employment is always below that of UK-born native women.

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[9] The analysis in Table 4 does not control for selection into employment. In other words, the analysis explores the gap in the capacity to sponsor a migrant given the existing patterns of selection into employment, not if all individuals were as likely to be employed in the first place.

Table 3 Regression results for full sample

Independent variable	(1) Dependent variable	(2)	(3)	(4)	(5)	(6)
	Not meet actual threshold			Not meet minimum wage threshold		
Gender (base male)						
Female	0.2397*** (0.0020)	0.2396*** (0.0020)	0.2489*** (0.0021)	0.2243*** (0.0021)	0.2241*** (0.0021)	0.2302*** (0.0022)
Ethnicity (base White British)						
Indian		0.0505*** (0.0071)	0.0967*** (0.0107)		0.0535*** (0.0075)	0.0819*** (0.0112)
Black		0.0652*** (0.0073)	0.1418*** (0.0116)		0.0700*** (0.0077)	0.1265*** (0.0121)
Pakistani		0.1641*** (0.0081)	0.2184*** (0.0129)		0.2115*** (0.0085)	0.2258*** (0.0136)
Other ethnics		0.0902*** (0.0050)	0.1368*** (0.0075)		0.1090*** (0.0052)	0.1463*** (0.0079)
Non-White	0.0897*** (0.0035)			0.1075*** (0.0037)		
Female × Indian			−0.0825*** (0.0142)			−0.0508*** (0.0149)
Female × Black			−0.1360*** (0.0146)			−0.0925*** (0.0153)
Female × Pakistani			−0.0895*** (0.0165)			−0.0240 (0.0173)
Female × other ethnics			−0.0811*** (0.0097)			−0.0647*** (0.0102)
R^2	0.1869	0.1874	0.1883	0.1554	0.1564	0.1568
Observations	194,071	194,071	194,071	194,071	194,071	194,071

Estimations from linear probability models in which the dependent variable is a dummy equal to one if the individual does not earn enough to sponsor a visa for a spouse. Estimated using UK LFS End User Licence data for 2012–2017. Estimations include controls for education, region of residence, and age. Please see the Data Appendix for definition of variables. The sample only includes UK citizens who are in work, unemployed or inactive (excludes self-employed)

Table 4 Regression results for those in work (excludes self-employed)

Independent variable	(1) Dependent variable	(2)	(3)	(4)	(5)	(6)
	Not meet actual threshold			Not meet minimum wage threshold		
Gender (base male)						
Female	0.3024*** (0.0025)	0.3028*** (0.0025)	0.3155*** (0.0026)	0.2593*** (0.0023)	0.2596*** (0.0023)	0.2695*** (0.0024)
Ethnicity (base White British)						
Indian		0.0432*** (0.0090)	0.1190*** (0.0128)		0.0300*** (0.0083)	0.0865*** (0.0118)
Black		0.0407*** (0.0095)	0.1444*** (0.0147)		0.0228*** (0.0087)	0.0819*** (0.0135)
Pakistani		0.1488*** (0.0133)	0.1961*** (0.0178)		0.1305*** (0.0121)	0.1512*** (0.0164)
Other ethnics		0.0689*** (0.0065)	0.1470*** (0.0093)		0.0702*** (0.0060)	0.1445*** (0.0085)
Non-White	0.0661*** (0.0047)			0.0580*** (0.0043)		
Female × Indian			−0.1474*** (0.0177)			−0.1098*** (0.0163)
Female × Black			−0.1749*** (0.0188)			−0.1000*** (0.0173)
Female × Pakistani			−0.1015*** (0.0263)			−0.0439* (0.0242)
Female × other ethnics			−0.1503*** (0.0127)			−0.1428*** (0.0117)
R^2	0.2177	0.2181	0.2199	0.1563	0.1567	0.1582
Observations	126,717	126,717	126,717	126,717	126,717	126,717

Estimations from linear probability models in which the dependent variable is a dummy equal to one if the individual does not earn enough to sponsor a visa for a spouse. Estimated using UK LFS End User Licence data for 2012–2017. Estimations include controls for education, region of residence, and age. Please see the Data Appendix for definition of variables. The sample only includes UK citizens in work (excludes self-employed)

Table 5 Gender differentiated threshold for those in work

	Neutral	Actual	Difference
T_f	£15,550	£18,600	− £3050
T_m	£24,600	£18,600	+ £6000
$\dfrac{\tau_f F}{\sum_{i=1}^{F} y_{fi}}$	0.76	0.91	− 0.15
$\dfrac{\tau_m M}{\sum_{i=1}^{M} y_{mi}}$	0.76	0.57	+ 0.19
$\dfrac{\sum_{i=1}^{F} T_{fi}}{F}$	0.45	0.56	− 0.11
$\dfrac{\sum_{i=1}^{M} T_{mi}}{M}$	0.43	0.26	+ 0.17
$\dfrac{\sum_{i=1}^{F} T_{fi} + \sum_{i=1}^{M} T_{mi}}{F+M}$	0.44	0.44	0

A 'neutral' threshold is one which restricts 44% of the UK workforce from being a sponsor and threshold to income ratio is the same across genders. See Eqs. 3 to 5 of the paper and related discussion for further details. Estimated using UK LFS End User Licence data for 2012–2017

The results presented in Figs. 3 and 4 suggests that taking into account the future earnings of the non-EEA spouse would have a greater effect on increasing the eligibility of UK sponsors who are women, since their partners are more likely to be employed in the future. As mentioned above, it would have been ideal to conduct this estimation using information on earnings, but the sample available is too small.

These results suggest that the gender of the potential migrant will play a big role in determining their expected fiscal contribution to the UK or their eligibility for income-related benefits. A policy which considers the potential fiscal contribution of the spouse or the
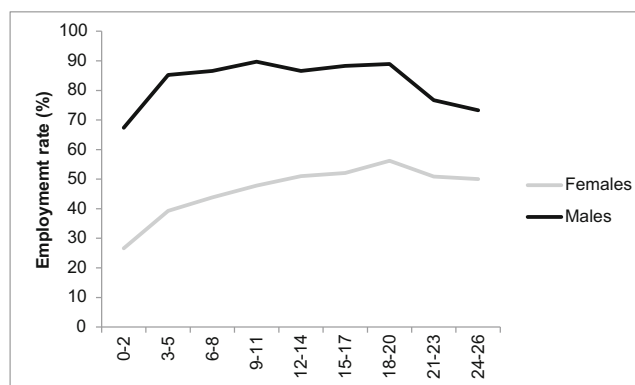

Fig. 3 Employment rates (%) of non-EAA born individuals who migrated for family reasons, by length of residence in the UK. The chart presents the share of individuals in each length of residence group who are employed. Estimated using UK LFS Secure Access data for 2012–2017

couple's eligibility for benefits in order to determine eligibility for a visa could in theory take these factors into account.

A key question is how to do this in practice. There are different options in this regard. The most obvious method would be to consider the non-EEA partner's pre-migration earnings at the time of making the application (or shortly before). So, if a person is working abroad, it would be assumed that, barring some time required for job search, they will be willing to work after arrival in the UK. Data on how many applicants were working at the time of their application is very limited, although a Home Office (2011b) analysis of a sample of spouses and partners applying to come to the UK from the top countries of nationality for family migration in 2009 found that 28% were in paid employment at the time of making the application. If this is representative of all family migration and trends have not changed significantly over time, this suggests that, on average, employment rates are higher after family migrants arrive in the UK than they are beforehand, and therefore that using pre-migration earnings as a proxy for future earnings is a conservative approach that is not likely to significantly overstate future employment prospects.

Alternative approaches to taking spousal income into account would be based not on actual earnings history but on group averages. For example, the government could lower the overall threshold by the average expected earnings of the partner, based on data for the non-EEA migrant population as a whole. In theory, the government could also take into account the non-EEA spouse's characteristics (e.g. education) to make assumptions about their future earnings. While this approach would not be without precedent in the field of economic migration,[10] it would be a significant departure from normal practices in family migration which—as noted earlier—are generally designed to prevent fiscal burdens rather than actively seeking to select people based on their skills.

Regardless of the method used to project future earnings, it is worth noting that applicants must renew their visa after 2.5 years, at which point they must show that they still meet the income threshold.[11] That means that in cases where the assumed future earnings of the non-EEA partner were too low, the couple would in principle lose their residence status in the UK.

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[10] For instance, Australia's skilled migration points test awards points for the skill level of the applicant's partner.
[11] They must demonstrate this again after 5 years when applying for permanent status.
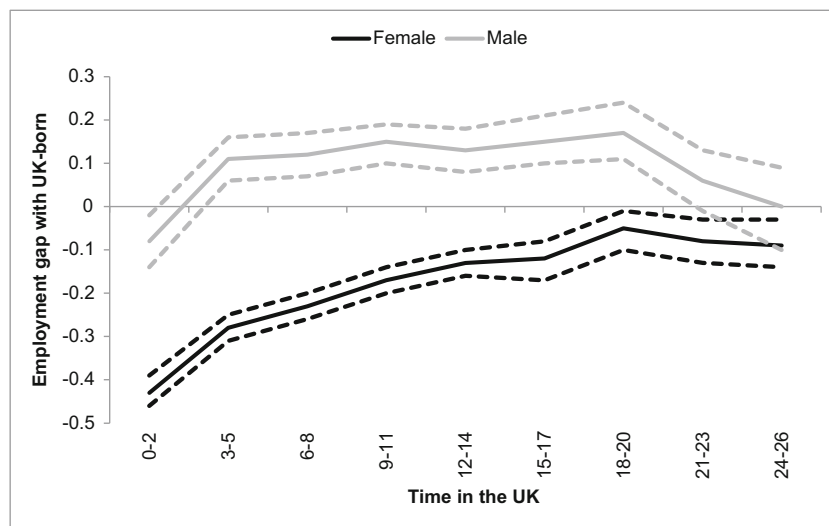
Fig. 4 Employment outcomes over time for non-EAA born individuals who migrated for family reasons (relative to UK-born, zero line). Estimations from linear probability models in which the dependent variable is a dummy equal to one if the individual is employment. The regressions are conducted separately for each gender. Estimated using UK LFS Secure Access data for 2012–2017. Estimations include controls for education, region of residence, and age. Please see the Data Appendix for definition of variables. The sample only includes non-EEA born family migrants and UK-born respondents. The figure shows the coefficients on dummies for length of stay in the UK in 3-year groups (set to zero for the UK-born)

Conclusion

The UK's family income threshold had three discernible policy objectives: to reduce the number of family migrants coming to the country, to limit the entry of family members who were expected to have negative fiscal impacts, and to limit the entry of low-income people whom they considered would have more difficulty integrating. Among the consequences of this policy have been substantial differences in the ability of groups of UK residents to live with their partner in the country. Our analysis shows that of the major demographic groups, women are disadvantaged most by the policy, followed by ethnic minorities.

While the available data on applications do not provide sufficient demographic information about the applicants and sponsors to be able to scrutinise its impacts on different types of families in any detail, it is notable that the introduction of the threshold coincided with a sharp uptick in the share of partners coming to the UK who were sponsored by men.

Was it inevitable that an income-based selection policy should have discriminatory consequences? Were there plausible options available to reduce the disproportionate impact on certain groups, other than abandoning income-related measures entirely? In theory, the government could have reduced the differential impact of income-related exclusions by having different thresholds for women and men (e.g. around £15,550 and £24,600 respectively). In practice, such a policy would bring problems of its own, including the introduction of explicit, direct gender discrimination into the immigration rules. It is perhaps not surprising that, other than discrimination

based on citizenship, examples of different policies with different characteristics are rare.[12]

Without differentiation by the characteristics of the applicant, the potentially discriminatory impact of a family income threshold policy could be reduced—though not eliminated—by changing the way it is implemented. For example, the analysis in this paper shows that women would disproportionately benefit from a policy to take account of the partner's prospective future earnings (e.g. by counting their current, foreign-earned income towards the threshold on the basis that currently employed people abroad are likely to seek and find work after arrival in the UK). Including spousal income would reduce the gender gap in eligibility but would not necessarily reduce gaps between groups with other characteristics, e.g. ethnicity.

It is also possible that some of the goals of the policy could be addressed without a potentially discriminatory threshold, through other means. Specifically, the government's objective of preventing fiscal costs could in principle be addressed by limiting access to benefits rather than preventing entry to the country entirely. While there are already limits on non-EEA migrants' access to public funds (e.g. unemployment benefits), this restriction does not apply to benefits that are received by couples (e.g. in-work tax credits), where one member of the couple has full access to public funds because they are a UK citizen or settled resident. Further restricting benefits access to

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[12] Age does factor into immigration eligibility in some cases, for example in the form of a lower income threshold for work visa applicants under the age of 26, which was explicitly designed to reduce the disadvantage faced by lower-earning young people at the beginning of their careers.

these couples would affect the fiscal consequences of family migration for those on low incomes (at least in the short run while restrictions remain in place).

The future of the UK's family migration policies remains uncertain, not least because of the disruption and change resulting from Brexit. The family income threshold was introduced during the pre-Brexit period in which the government's only option for meeting its commitments to reduce net migration involved tighter policies towards non-EU migration. Now that the substantial levels of EU migration are potentially also within scope for migration restrictions, it is at least in theory possible that further restrictions on family migration policies (e.g. further increases in the income threshold) become a lower priority. However, with salary thresholds playing a strong role across UK immigration policies, it seems likely that the basic architecture of the UK's family income threshold will remain in place for the time being.

Beyond the UK, the findings of this study are also highly relevant for other high-income countries. Family is the single largest category of migration to OECD countries (OECD 2017) and many of these countries have adopted income or similar requirements in order to restrict family migration. The concern that these policies have a disproportionate effect on some sectors of the population (e.g. women, minorities) also applies to these countries.

Exploration and monitoring of the impact of such policies in other countries could help to find policy alternatives that moderate this inequality. For example, further research could investigate whether different approaches to implementing income thresholds in different countries affect its potential for discriminatory outcomes—exploring the impacts of both the level at which thresholds are set and what resources are counted towards the threshold (e.g. spousal income, savings, support from third parties or housing provided by family members).

Compliance with Ethical Standards

Conflict of Interest The authors declare that there is no conflict of interest.

Appendix 1

Table 6 Data definitions

Variable	Definition
T_i	Dummy equal to one if the individual does not earn enough sponsor a partner under a given income threshold.
τ	A given income threshold.
Female	Dummy equal to one for females, zero otherwise.
Indian	Dummy equal to one for those self-identifying as Indian regardless of country of birth, zero otherwise. Main sample only includes British citizens.
Black	Dummy equal to one for those self-identifying as Black regardless of country of birth, zero otherwise. The category includes Black African, Black Caribbean, and Black British. Main sample only includes British citizens.
Pakistani	Dummy equal to one for those self-identifying as Pakistani regardless of country of birth, zero otherwise. Main sample only includes British citizens.
Other ethnicities	Dummy equal to one for those self-identifying with any other ethnicity regardless of country of birth, zero otherwise. Other ethnicities include, among others: White Irish, Other White, Bangladeshi, and Chinese. Main sample only includes British citizens.
Non-White	Dummy equal to one for those self-identifying as Indian, Black, Pakistani, or other ethnicities, zero for those self-identifying as White British. Main sample only includes British citizens.
Age	In years.
A levels	Dummy equal to one if the person highest education was Advanced Levels (main school leaving qualification in the UK, mostly studied at 16–18 years of age).
GCSE	Dummy equal to one if the person highest education was a General Certificate of Secondary Education (broadly the record of achievement at the age of 16).
Other, no qualification	Dummy equal to one if the person had education below GCSE level.
Regional dummies	The analysis also includes dummies for 10 regions: Scotland, Wales, South West, South East, East, West Midlands, East Midlands, Yorkshire, North West, and North East. London is the base region.
Year dummies	The analysis also includes dummies for year: 2013, 2014, 2015, 2016, and 2017. 2012 is the base year.

Appendix 2. Additional estimations

Table 7 Regression results for full sample including single individuals only

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable					
	Not meet actual threshold			Not meet minimum wage threshold		
Gender (base male)						
Female	0.1409*** (0.0028)	0.1409*** (0.0028)	0.1500*** (0.0029)	0.1405*** (0.0031)	0.1407*** (0.0031)	0.1494*** (0.0032)
Ethnicity (base White British)						
Indian		0.0871*** (0.0124)	0.1826*** (0.0185)		0.1247*** (0.0135)	0.2120*** (0.0202)
Black		0.0904*** (0.0092)	0.1586*** (0.0148)		0.1094*** (0.0100)	0.1588*** (0.0161)
Pakistani		0.1415*** (0.0133)	0.1924*** (0.0196)		0.2088*** (0.0145)	0.2608*** (0.0213)
Other ethnics		0.0958*** (0.0072)	0.1399*** (0.0108)		0.1266*** (0.0078)	0.1779*** (0.0117)
Non-White	0.0992*** (0.0052)			0.1327*** (0.0056)		
Female × Indian			−0.1721*** (0.0247)			−0.1573*** (0.0269)
Female × Black			−0.1086*** (0.0183)			−0.0791*** (0.0200)
Female × Pakistani			−0.0936*** (0.0265)			−0.0957*** (0.0289)
Female× other ethnic			−0.0778*** (0.0141)			−0.0905*** (0.0153)
R^2	0.1776	0.1777	0.1788	0.1453	0.1456	0.1464
Observations	91,345	91,345	91,345	91,345	91,345	91,345

Estimations from linear probability models in which the dependent variable is a dummy equal to one if the individual does not earn enough to sponsor a visa for a spouse. Estimated using UK LFS End User Licence data for 2012–2017. Estimations include controls for education, region of residence, and age. Please see the Data Appendix for definition of variables. The sample only includes single UK citizens who are in work, unemployed, or inactive (excludes self-employed)

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