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Immigration and the top 1 percent

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DISCUSSION PAPER

// ARUN ADVANI, FELIX KOENIG, LORENZO PESSINA,
AND ANDY SUMMERS

Immigration and the Top 1 Percent

Leibniz Association

ZEW

Immigration and the Top 1 Percent

Arun Advani, Felix Koenig, Lorenzo Pessina, and Andy Summers*

November 30, 2022

Abstract

We study the contribution of migrants to the rise in UK top incomes. Using administrative data on the universe of UK taxpayers, we show migrants are over-represented at the top of the income distribution, with migrants twice as prevalent in the top 0.01% as anywhere in the bottom 97%. These high incomes are predominantly from labour, rather than capital, and migrants are concentrated in only a handful of industries, predominantly finance. Almost all (90%) of the observed growth in the UK top 1% income share over the past 20 years has accrued to migrants.

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The dynamics of top incomes are important for our understanding of entrepreneurship and innovation, growth, aggregate demand and savings, and the effects of taxation.[1] Identifying the sources of growth in top incomes is necessary to interpret the underlying mechanisms, and determine what policy responses are appropriate, if any. Recent work has studied the source of these incomes and the characteristics of those who receive them (Bell and Van Reenen, 2014; Piketty, Saez and Zucman, 2018; Smith et al., 2019; Advani and Summers, 2020). However, prior work was unable to distinguish between natives and migrants—a distinction we will show is essential for understanding changes in the top 1% income share in the UK. In particular, we find that migration accounts for the vast majority of the growth in UK top 1% income share in the past 20 years.

We make use of confidential, anonymised data on the universe of taxpayers in the UK, from 1997 to 2018, to study the role that immigration plays at the top of the income distribution. We exploit the process by which National Insurance Numbers (NINOs) – the UK's Social Security Numbers – are assigned to identify migrants arriving since the Second World War, and in more recent years cross-check this with administrative microdata on migrant workers. We use this to examine the rise in top income migrants, their sources of income and their contribution to measured growth in the top income share.

In surveying the literature on the importance of high-skilled migration for innovation, entrepreneurship and growth, Kerr et al. (2017) highlight that 'a key objective that research should address over the next decade [is] to trace out how high-skilled migration impacts inequality within and across countries.' Saez and Veall (2005) suggest that rising top incomes in Canada are driven by changes in US top taxes and a consequent threat of emigration from Canada to the US; Atkinson and Leigh (2008) show a similar effect in New Zealand. These studies point to a potential impact of migration on inequality in the origin country. But

[1]See for example Gabaix et al. (2016); Jones and Kim (2018); Aghion et al. (2019); Bell et al. (2019); Lansing and Markiewicz (2018); Jones (2022); Auclert and Rognlie (2017, 2018); Straub (2019); Roine, Vlachos and Waldenström (2009); Aoki and Nirei (2017); Rubolino and Waldenström (2020).

little is known about how high-skilled migration affects inequality in the receiving country. Our work provides the first exploration of this relationship. We present three main results.

First, migrants are very prevalent at the top of the UK income distribution. Although much of the political and public discussion around migration focuses on low-skilled migrants, we show the share of migrants in the top 1% (0.01%) is 1.2× (1.8×) the share in the bottom 10%, and 1.4× (2.1×) the share at the median. This share has grown rapidly over the past two decades, rising by 53% for the share of migrants in the top 1%, and more than doubling for those in the top 0.01%.

The economic literature has advanced numerous explanations for rising top income shares, including tax policy (Roine, Vlachos and Waldenström, 2009; Alvaredo et al., 2013; Piketty and Saez, 2013), the degree of labour and product market regulation (Piketty and Saez, 2006; Bivens and Mishel, 2013; Saez, 2019), technological change (Autor, Katz and Kearney, 2006, 2008; Koenig, 2019), and performance pay for CEOs (Gabaix and Landier, 2008; Lemieux, MacLeod and Parent, 2009). These explanations share a common feature: they explore the effects of a changing economy on a *fixed* population. Thus far they omit the striking global growth of high-skilled migration, which 'rose by nearly 130% from 1990 to 2010' (Kerr et al., 2016). Migration and migration policy are therefore likely to be a crucial part of understanding changes to top income shares, not only in the UK but globally.

Second, we show that – as in the US (Smith et al., 2019) – growth in UK top incomes has been driven by rising income from human capital. The UK has been the destination of choice for many high profile migrants, including high wealth individuals such as Lakshmi Mittal and Roman Abramovich. It is natural to wonder whether the incomes of top migrants are driven by investment rather than labour income. We find the share of earned income going to top migrants has doubled over the past twenty years, while there has been no change in the share of investment income they receive.

The rise of the financial sector in the UK has been a key contributor to the increase in the share of top incomes coming from labour (Bell and Van Reenen, 2014), and this

is true for migrants as well: 47% of top income to migrants comes from finance. Similar to 'tech' in the US – which also has a large migrant share – these jobs are concentrated in particular locations, suggesting agglomeration externalities (Devereux, Griffith and Simpson, 2007; Brülhart, Jametti and Schmidheiny, 2012; Kerr et al., 2017). These location-specific productivity effects potentially serve not only as a magnet to top earning immigrants but may also dampen the returns to tax-induced emigration (Kleven et al., 2020).

In contrast to the US (Kerr et al., 2017), most migrants to the UK do not arrive as students or even immediately after university. Rather they are predominantly middle-aged individuals who migrate straight into a high-paying job. Despite this, they are significantly younger than top income natives: the median migrant joining the top 1% is 44 years old, compared with 48 for the median native. They are also highly paid relative to natives in the same industry. This suggests migrants are positively selected on earnings ability. Once in the top 1%, they are also no less likely to stay there than natives, up to two decades later.

Finally, we show that migrants contribute 90% of the rise in the top 1% share over the past two decades. This comes from an accounting decomposition, in the manner of growth accounting; it is not intended to quantify a causal estimate of the impact of migrants. Nevertheless it is an important stylised fact that quantitative models of top income shares, described earlier, need to account for: much of the growth in income concentration comes not from a reallocation of resources within a fixed population, but from a change in the underlying population. Our migration-adjusted top income shares, removing migrants from throughout the UK income distribution, narrow the gap in inequality between the UK and continental Europe to around 2 percentage points (pp), roughly half of the existing difference.

This result also provides a new lens on the debate concerning international comparisons of top share inequality. Top income shares have risen substantially in English-speaking countries (US, UK, Australia, Canada) over the past decades, while the rise has been more modest in continental Europe and in Japan (Atkinson, Piketty and Saez, 2011). Over the same period, English-speaking countries have attracted a large influx of high-skilled migrants.

Kerr et al. (2016) report that the US, UK, Australia, and Canada alone received nearly 70% of high-skilled foreigners who migrated to OECD countries in 2010. Migration is therefore an important channel in explaining cross-country differences. Where tax and regulatory policy drive differences in top shares, this is not only because of changes *within* individual economies. Instead these differences also lead to a reallocation of human capital across countries, moving high earners and hence affecting national measures of top share inequality in both sending and receiving countries.

The remainder of the paper is organised as follows. Section 1 describes our data sources, including our novel approach to identifying migrants in the administrative data. Section 2 examines the prevalence and rise of top income migrants in the UK. Section 3 documents migrants' sources of incomes, and their characteristics. Section 4 decomposes top share growth in the UK over the past two decades, to quantify the proportion attributable to migrants. Section 5 concludes.

1 Data and measurement

We use administrative tax data from the UK tax authority (HMRC) to measure top incomes and identify migrants and natives resident in the UK. We observe the universe of personal tax returns filed for tax years 1997 to 2018.[2] The tax unit is an individual.

To calculate top income shares based on the total adult population (given that not all adults are taxpayers), we apply external control totals for population and income. We use the same data sources and approach outlined in Advani, Summers and Tarrant (forthcoming), as currently used for the UK fiscal income series of the World Inequality Database (WID). We depart slightly from the current WID UK methodology in that we define 'adult' as an individual aged 18+ (instead of 15+ as used in WID). This is for consistency with our definition of a migrant, as we describe in Section 1.2.

[2]The UK tax year runs from April to April. In line with HMRC practice, we cite the latter year, so the tax year 2017-18 is given as 2018.

1.1 Measuring incomes

We measure pre-tax *fiscal* income, meaning all income that is assessable for income tax, prior to the deduction of income tax and National Insurance Contributions (NICs) levied at the personal level. We classify income into two main categories. 'Earned income' includes income from employment, self-employment and partnership activities, as well as pension income in retirement. 'Investment income' includes interest from savings, dividends, rents from property and all other taxable income from investments.[3] Our definition of income, and sub-division into earned and investment income, exactly replicates the definitions used in HMRC's Survey of Personal Incomes (SPI), which is the standard data source for top income statistics in the UK (Atkinson, 2007, 2014; Alvaredo, 2017).

Our definition of fiscal income excludes realised capital gains because these are not assessable for income tax. This is standard in the current UK inequality literature (Atkinson, 2007, 2014; Alvaredo et al., 2018; Burkhauser et al., 2018), as well as in the US (Piketty and Saez, 2003). Recent work investigates the impact of capital gains on UK top shares and documents that some gains reflect repackaged income (Advani and Summers, 2020). However, here we follow the established approach to UK income measurement in order to focus our analysis on the role of migration, rather than making simultaneous innovations to the income definition.

In line with the literature, our income measure focuses on taxable income, so misses tax avoidance and evasion. One particular feature of the UK tax code effectively exempts foreign investment incomes from taxes if the taxpayer has a foreign 'domicile' i.e. the taxpayer declares their permanent home is abroad. 'Non-dom' status and offshore tax optimisation are both likely to be more common among internationally-mobile individuals. Our income measure correctly identifies migrants' position in the distribution of taxable income. This is

[3]Although the categories of earned and investment income broadly map to the economic distinction between labour and capital income, this distinction is blurred for some individuals. In the UK, like the US, there is a significant tax incentive for active owner-managers to repackage their labour income in form of dividends (Miller, Pope and Smith, forthcoming; Smith et al., 2019). In this respect, our measure of earned income is likely to underestimate the labour share of total income in economic terms.

a conservative estimate of the position of migrants in terms of worldwide income. However, our income definition is the standard one used for top income statistics and thus allows us to accurately quantify the contribution of migrants to these headline figures.

1.2 Measuring migrants

We define a 'migrant' as an individual who migrated to the UK after the age of 18. Identifying the migrant status of top earners is challenging in most countries because although administrative tax data provide excellent coverage of top incomes, they contain limited demographic information about taxpayers because these characteristics are typically not relevant for tax purposes. For example, the standard form used to file annual personal income tax in the US (IRS form 1040) is used by American citizens and foreigners ('resident aliens') alike and does not require disclosure of citizenship or migration status.

To build our migrant indicator, we exploit the structure of National Insurance Numbers (NINOs), which are issued to UK residents for social security purposes and are also used by HMRC as the primary unique taxpayer identifier. NINOs all have the following structure:

$$\underbrace{AB}_{\substack{\text{sequential}\\ \text{prefix}}} - 123456 - C$$

The two-letter 'NINO prefix' corresponds with a date range when the NINO was originally assigned. Once a NINO has been assigned to an individual, it is never reused. We use archival records to build a novel crosswalk from NINO prefixes to assignment dates covering the entire history of the National Insurance system since NINOs were introduced in 1947.[4] This allows us to identify, for anyone born after 1930 (age 67 in the first year of our sample), the year when their NINO was assigned.[5]

[4]Bernstein et al. (2018) use a similar approach in the US to link patent records to migrants identified by Social Security Numbers.

[5]For individuals born before 1931 whose NINO was assigned in 1947 when the National Insurance system was introduced, we are unable to determine migrant status based on the NINO prefix, so these individuals are excluded from our analysis.

Children who live in the UK are automatically assigned a NINO at age 16. The exact process of assignment has changed over time but has always occurred at this age.[6] A migrant who arrives in the UK after age 16 is required to apply for a NINO through the adult registration process. A NINO is required by law for any individual liable to pay National Insurance Contributions, which includes anyone working in the UK with earned income from any source; it is also required to claim benefits. A NINO is also required to file a tax return, other than in exceptional circumstances.

We determine an individual's migrant status by comparing the year when their NINO was assigned with their year of birth. We define a migrant as someone who was assigned their NINO after the age of 18. Since this leaves a clear gap between our age threshold and the age at which automatic assignment to natives occurs (age 16), it guards against the risk of false positives for migrant status. It also means we can identify all adult migrants to the UK, without any bias from later naturalisation.

We cross-check our results on the number of migrants in two different ways. First, for individuals who arrived to the UK after 2001, we compare our results with data collected at the time of application for a NINO, available internally within HMRC. All adult registrants for a NINO must attend an interview with a government employee and provide personal details. If the applicant does not have British nationality at the time of registration, this is recorded. This data source closely matches our results and gives us confidence that we are correctly identifying migrants.

Second, the share of foreigners among all individuals in our dataset is close to the population-wide estimates produced by the UK Office for National Statistics (ONS). In 2017, we find that around 14.3% of all taxpayers are migrants. This is close to the ONS estimate that around 14.4% of individuals living in the UK are foreign-born (Office for National Statistics, 2019).

[6]From 1947 to 1975, it was compulsory for all UK residents to apply for a NINO by age 16 regardless of intention to work; archival records show that this requirement was strictly enforced. Since 1975, NINOs have been assigned automatically to children at age 16, based either on school registers or entitlement to (universal) child benefits.

1.3 Measuring industry

To analyse the sectors in which top earning migrants work, we assign individuals to an industry based on the Standard Industrial Classification (SIC) 2007 version. For employees, PAYE (payroll) data provides the employer's SIC code. Individuals with self-employment or partnership income report their business description on the tax return, and HMRC convert these descriptions to a SIC code.

For individuals with only one source of earned income, we assign the industry associated with that source. For individuals with multiple different sources (or multiple employers), we take the SIC code associated with the single largest earned income source. We do not assign any industry to individuals with investment or pension income as their single largest source, except in the case of owner-managers of closely-held companies. We classify an individual as an owner-manager where they received dividends as their single largest income source and reported being a director of a closely-held company, which is defined in UK tax law as a firm with five or fewer directors and/or shareholders.

2 Prevalence and rise of top migrants

2.1 Prevalence of migrants across the income distribution

Migrants make up 24% of individuals in the top 1% of the income distribution in 2017 (Figure 1a). This compares to just 16% among all UK taxpayers (Figure 1a) and similarly for the adult population as a whole (Office for National Statistics, 2019). As we show below, this pattern of concentration at the very top is observed across all years of the data.

In the popular imagination it is low-income migration that looms largest, and Figure 1a shows the migrant shares are declining gently across most of the income distribution. They reach a low between the 82nd and 88th percentiles, then rise slowly up to the 95th percentile and more rapidly thereafter. The migrant share at the 98th percentile is 0.5pp higher than

anywhere lower in the taxpayer distribution, but 99th stands out sharply at more than 5pp above the 98th.

This rise was previously not observable in UK data. The Quarterly Labour Force Survey data, used by Dustmann, Frattini and Preston (2013) and Dustmann, Schönberg and Stuhler (2016), are censored from around the 97th percentile. This is too low to pick out the extreme rise at the top. Sample sizes in the Family Resources Survey, used in Figure A1, are too small to pick out percentiles. In both cases there is likely to be an undercount of the number of migrants (O'Connor and Portes, 2021).

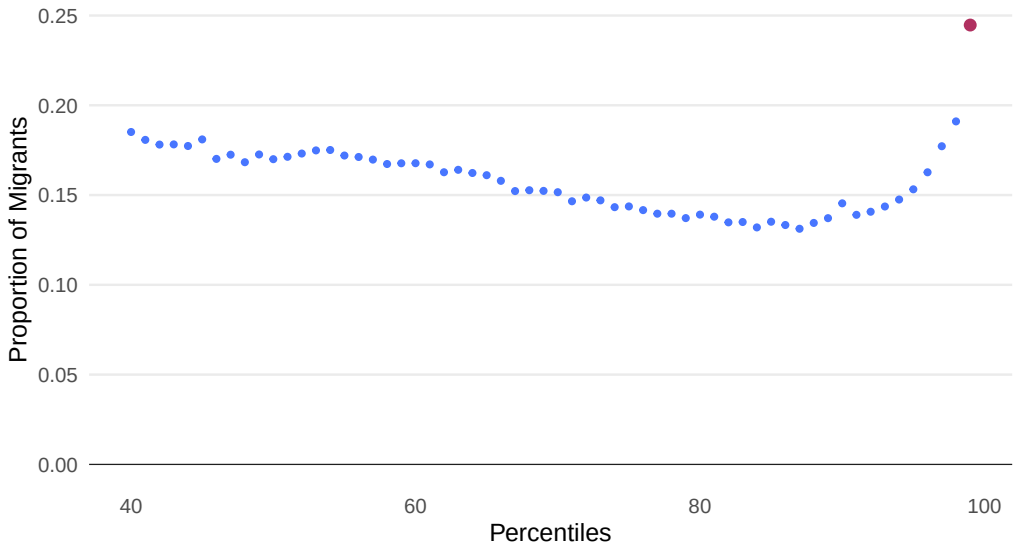
Within the top percentile, migrants predominantly locate at the very top, making up 29% of the top 0.1%-0.01%, and 36% of the top 0.01% (Figure 1b). This makes them twice as prevalent in the top 0.01% as anywhere in the bottom 97%. These results are a lower bound since, as described in Section 1, we do not observe foreign investment incomes for individuals who have 'non-dom' status – almost all of whom are migrants – and claim the 'remittance basis'.[7] If we were to include this foreign investment income, following the approach in Advani, Burgherr and Summers (2022), this would increase the number of top 1% migrants by around 7% each year from 2009 (when we can observe the necessary information) once displacement of other individuals from the top 1% is accounted for.

It is already known that the UK is an important destination for high-skilled migration (Kerr et al., 2016). What is striking is that these flows are so quantitatively large, and the migrants so positively selected, that migrants make up a quarter of the top 1%, and a third of the top 0.01%. In one sense it should perhaps not be surprising: 44% of chief executives at the 50 largest UK companies are foreign-born (Hartmann, 2017), as are 32% of the top 100 individuals (defined on wealth not income) in the Sunday Times Rich List. The highest echelons of income and wealth are therefore clearly very international. Our results show that international mobility and global talent flows run far deeper, beyond the top hundreds of people down to the top hundreds of thousands of people.

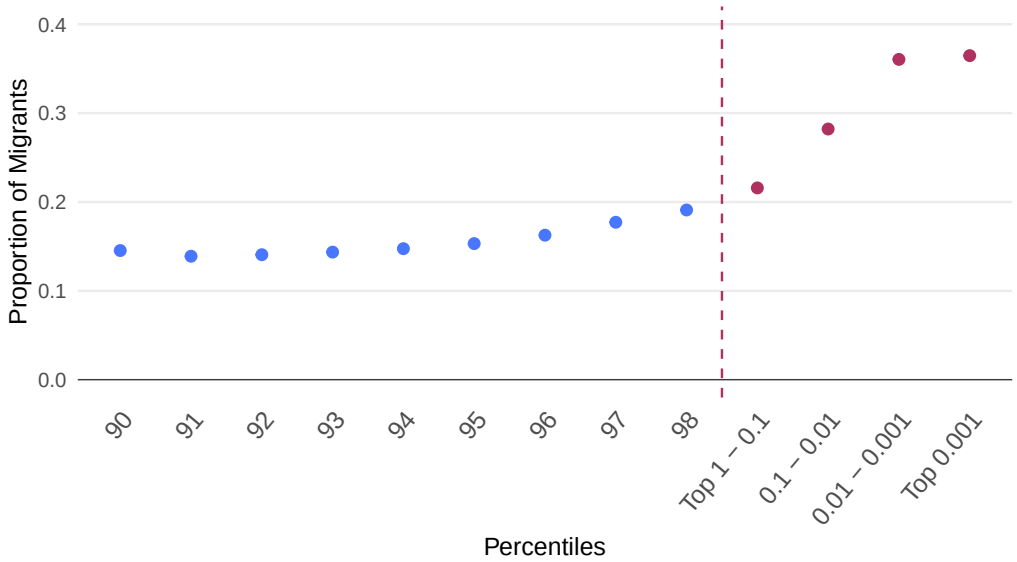
[7]This untaxed foreign investment income is also missing from the fiscal income definitions typically used when measuring income top shares (Atkinson, 2002, 2007).

Figure 1: *Migrants are over-represented at the top of the income distribution*

(a) *Proportion of migrants at percentiles of the income distribution*



(b) *Proportion of migrants within the top decile*



[Notes] The charts show the proportion of migrants among individuals located in each fractile of the (fiscal) income distribution in 2017. The lower 40 percent of the adult population do not pay income tax, so are not consistently reported in the administrative data. Panel (a) plots the proportion for the remaining percentiles of the income distribution. Panel (b) shows the proportion for percentiles from 90th-98th, for the top 1% of individuals excluding the top 0.1%, for the top 0.1% excluding the top 0.01%, for the top 0.01% excluding the top 0.001%, and for the top 0.001%. The unit of analysis is an individual taxpayer. Percentiles of the fiscal income distribution are defined relative to the total number of individuals aged 18 or older in the population living in the UK. Income is defined as the sum of "total earned income" (TEI) and "total investment income" (TII). TEI comprises income from employment, trading income from self-employment activities, partnership income, and pensions. TII comprises income from savings and investments including interest, dividend payments, rent from properties.

2.2 Rise in migrants at the top

While the rise in migrants at the bottom of the income distribution has been well-documented and is an important part of the UK political narrative, the growth in top migrants has not previously been recognised. Figure 2a shows the rise in the proportion of migrants among individuals in various top shares over the past twenty years.[8] The share of migrants in the top 1% rose 53% between 1997 and 2018, while the top 0.01% and 0.001% both saw their migrant shares double. The migrant share of the top 1% has continued to grow as rapidly as in the bottom 99%, despite already starting from a much higher base. Top migrants are also much more likely to come from the Anglosphere and Western Europe, whilst those outside the top 10% are largely from Eastern Europe (see Appendix B.2).

Figure 2b shows what this means for the share of all income at the top that goes to migrants. Driven largely by the rise in the number of top migrants, the share of top 1% (0.01%) income going to migrants rose from 16% (18%) in 1997 to 27% (36%) in 2018.

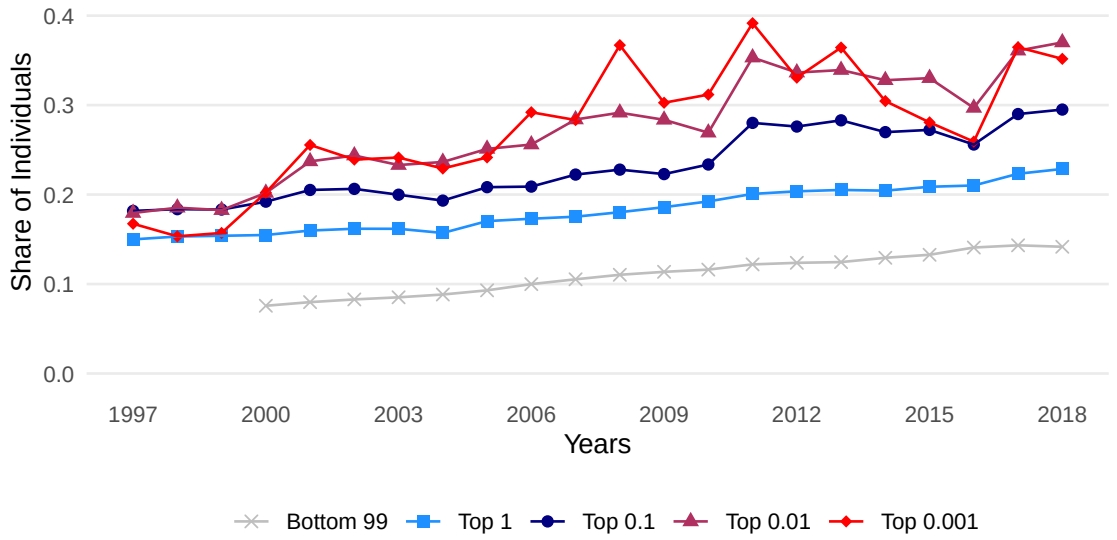
Many explanations for the dynamics of top shares implicitly assume the individuals that make up that top share are fixed (Gabaix and Landier, 2008; Autor, Katz and Kearney, 2008; Lemieux, MacLeod and Parent, 2009). We see that in fact this is not the case: the rising migrant share comes not from rising relative incomes but from a rising number of migrants joining the top.[9]

[8] We focus on the share of income going to different shares of the population. Krolage, Peichl and Waldenström (2022) discuss alternative approaches to measuring income concentration, including the share of income going to a fixed population and the share going to people with income above a fixed (inflation-adjusted) threshold.

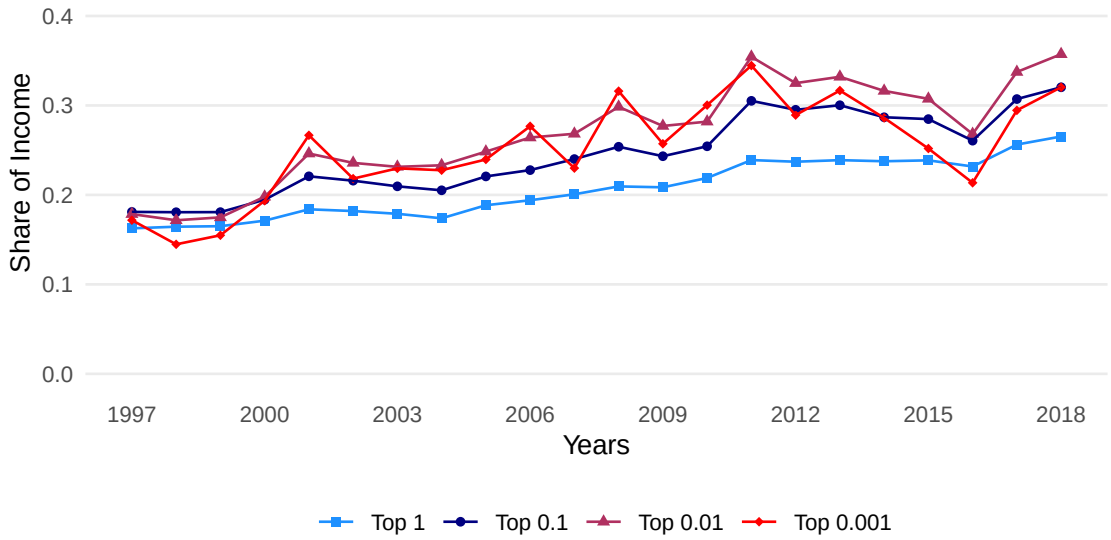
[9] Recent work by Bell, Bloom and Blundell (forthcoming) also highlights the role of mobility, showing movements in workers' positions across the wage distribution.

Figure 2: *Migrants have become more prevalent at the top since 1997*

(a) *Share of individuals who are migrants*



(b) *Share of income in top fractiles that goes to migrants*



[Notes] These graphs display the evolution of the following time series: Panel (a) shows the proportion of migrants in each fractile; Panel (b) the share of top income going to migrants in each fractile. The unit of analysis is an individual. Income is defined as the sum of earned income and investment income. For all but the 'Bottom 99' series, a migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older, with top shares defined relative to the total number of individuals aged 18 or older in the population living in the UK. The 'Bottom 99' series is calculated from Office for National Statistics (2019).

3 What are migrants doing?

3.1 The importance of earnings

Migrants make up an increasing share of top *earnings*, but their share of investment income is unchanged since the late 1990s. Figure 3a shows, separately for earnings and investment income, the cumulative growth in the share of this income going to migrants. Migrants' share of all top 1% earnings has roughly doubled since 1997.[10] In contrast there has been no change in the share of overall investment income: interest, dividends, and rents from properties.[11]

This pattern also holds, but is more extreme, further up the income distribution. The share of earnings going to migrants in the top 0.1% (0.01%) has nearly tripled (quadrupled) since 1997 (Figure A2). Hence even at the very top, migrants are active participants in the labour force, highlighting the increasing importance of labour income at the top. In both cases investment income shares for migrants have remained flat.

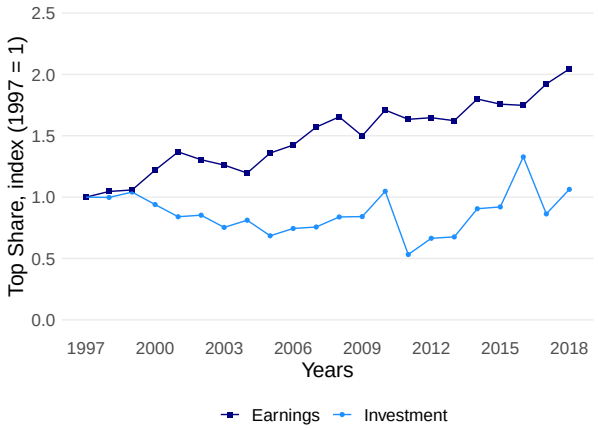
The rising importance of labour income is true for natives as well. In 1997 migrants in the top 1% received 84% of their income from earnings, compared with 80% for natives. By 2017 it was 92% to 87%. In the top 0.01%, migrants (natives) have moved from 68% (54%) of income from earnings to 90% (83%). Despite the rise of labour income for both groups, the labour share of income remains higher for migrants. Since labour income is taxed more heavily than capital income, migrants in the top 1% have a higher effective average tax rate, paying 37.5% of their income in tax, compared to 36.0% for natives. These results

[10]Figure A3 shows that the patterns for employment and self-employment are similar throughout the period.

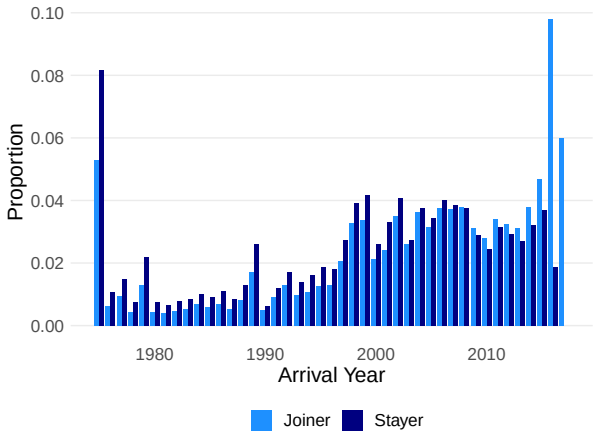
[11]Note, as discussed in Section 1.2, that we find a lower bound on the true investment income of migrants. Between 10-15% of top 1% migrants have 'non-dom' status and claim the remittance basis (see Table A1). They will not be taxed on, or have to report, their foreign investment income. This foreign investment income is excluded from standard fiscal income measures, so we are consistent with previous work. However, this undercounts 'true' investment income migrants may have, which one might also be interested in. The share of migrants who are non-doms has been roughly flat over the past decade, so unobserved investment income per non-dom migrant would have to have grown extremely rapidly to overturn the relative pattern between earnings and investment income.

Figure 3: *Characteristics of migrants at the top*

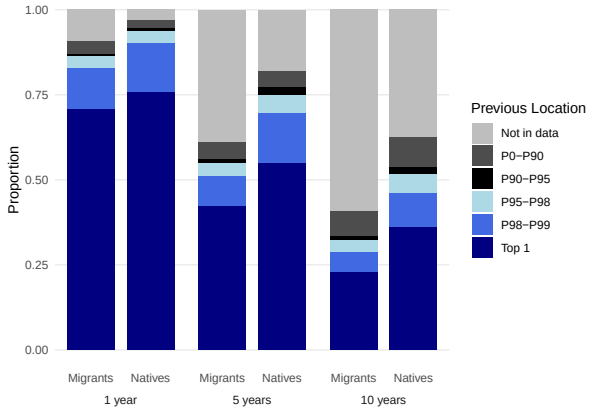
(a) *Fraction of earnings and investment income in top 1% going to migrants (1997 = 1)*



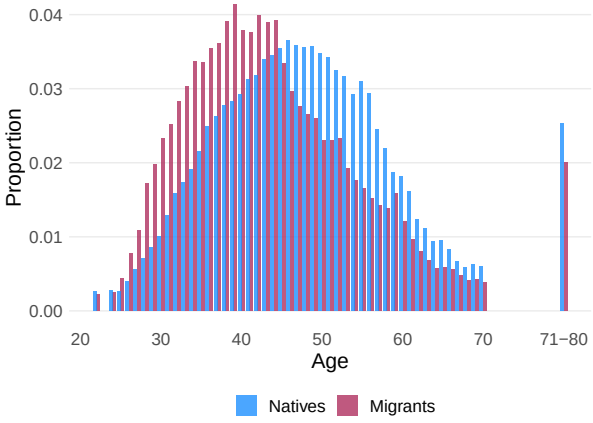
(b) *Distribution of year of arrival for migrants who reach the top 1% in 2017*



(c) *Past location in the income distribution, for individuals in the top 1% in 2017*



(d) *Age distribution of individuals who reach the top 1% in 2017*



[Notes] Panel (a) shows the cumulative growth rate from 1997 to 2018 of migrants' earnings share of top 1% income, and migrants' investment income share of top 1% income. Each series is normalized to 1 in 1997. Panel (b) shows the distribution of year of arrival for migrants in the top 1% in 2017. "Joiner" represents the distribution of individuals who reached the top 1% in 2017 but were not in the top 1% in 2016, while "Stayer" represents the distribution of individuals who were in the top 1% in both 2016 and in 2017. Individuals arriving before 1975 are pooled into the left-most bars. Panel (c) shows, for individuals in the top 1% in 2017, where in the income distribution they were 1, 5, and 10 years earlier, separately for natives and migrants. Bars give the shares who were in different percentile ranges, or who were not in the data, either because they were not yet adults (natives) or had not yet arrived in the UK (migrants). Panel (d) shows the age distribution for individuals that reached the top 1% in 2017 but were not in the top 1% in 2016, showing the distribution for migrants and natives separately. Each bar represents one year of age, except for years of age between 20-23 that are grouped into two-year bins and for ages between 71-80 that are grouped into a single bin labeled "$71-80$" in the figure, for reasons of disclosure. The unit of analysis is an individual. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

are notwithstanding the repackaging of some labour income into investment income (Smith et al., 2019; Miller, Pope and Smith, forthcoming).

The picture for migrants contrasts sharply with the common image of top migrants as high wealth individuals living off the returns to wealth. While such cases clearly exist, quantitatively earnings are more important, and increasingly so at the very top.

3.2 The importance of finance

Having seen that top migrants rely on earnings, it is natural to ask where these come from. Table 1a shows – among migrants who report some earned income or are owner-managers – the ten industries which engage the largest share of migrants who are in the top 1% in 2017.

The importance of finance is immediately clear. More than one in six top migrants work for a bank. Taking into account support to financial services, fund managers, and other smaller areas of financial activity, finance employs more than a quarter of all migrants in the top 1%. Healthcare is the second most important area: one in ten top migrants is employed in a hospital, medical practice or some other human health activity.

The concentration in finance is disproportionate. Finance is clearly an important industry in the UK, and many people working in finance have high incomes (Bell and Van Reenen, 2014). But finance is highly dependent on migrants: they make up 40% of top individuals who are employed in banks, and between 35% and 47% of top individuals in credit bureaus, securities dealing, financial management, fund management and support to financial services (Table 1b).

The concentration of finance in the UK, specifically London, is crucial for understanding how responsive migrants might be to economic policy.[12] While they have no choice but to respond to migration policies such as visa restrictions – which would clearly have implications for the financial sector – their response to taxes will depend on their outside options. Given

[12]Among top earning migrants, 71% are in London and the South East (56% in London only), compared with 49% (25%) of top natives. The proportional rise in top migrants has also been higher in the London area than elsewhere: the number of top earning migrants in London and the South East in 2018 was more than three times (3.4×) its 1997 level, compared with not quite doubling (1.7×) in the rest of the country.

the large agglomeration externalities present in finance, it is likely that many migrants to the UK will be less responsive to top income taxes than migrants seen in other contexts (Kleven et al., 2020).

3.3 Local training or international poaching?

Many migrants receive incomes that put them in the top 1% immediately on arrival to the UK. One in six migrants who join the top 1% in 2017 arrived in the UK in either 2016 or 2017 (Figure 3b).[13] A third arrived in the past five years.[14]

Migrants in the top 1% spend little time further down the income distribution. Figure 3c shows that, looking back over different horizons, almost all migrants in the top 1% in 2017 were either already in the top 1% in earlier years, or else not yet in the UK. The rate of entry is high: 10% (60%) were not in the UK a year (decade) earlier.

In the US, by contrast, migrants who reach the top are much more likely to get there via local training at a US university and then working their way up (Kerr et al., 2017). This may partly be explained by the US' historically more restrictive visa system, which made universities an important route into the US.

These results again underscore the importance of going beyond national borders in thinking about the dynamics of top incomes, to account for international poaching of top earners. Not only is there substantial entry to the top, so that the top 1% are not a fixed group, but a large portion of that entry is from individuals who were not previously *anywhere* in the UK income distribution.

[13]We do not know when in the tax year a migrant arrives. We therefore combine the last two arrival years, since some migrants may immediately have an annualised income that puts them in the top 1%, but we only observe part of it in the year they arrive.

[14]Of those who were already at the top before 2017, 18% arrived in the previous five years, and 35% in the past decade.

Table 1: *Industries with highest proportions and concentrations of migrants in 2017*

(a) *What industries do top 1% migrants work in?*

	Industry (SIC)	Share of Top 1% Migrants	Average Income (£)	Migrant Premium	Industry Dependency Ratio	
					Share	Rank
1	Banks (64191)	17.0	383,301	1.23	39.7	5
2	Hospitals (86101)	6.4	160,412	0.97	37.1	8
3	Management consulting (70229)	4.2	326,813	1.21	27.4	31
4	Support to financial services (66190)	4.1	515,550	1.32	34.7	10
5	Fund managers (66300)	3.6	431,620	1.02	36.1	9
6	Information technology (62020)	2.4	207,960	1.03	21.1	59
7	Head offices (70100)	2.2	422,862	1.25	27.1	32
8	Medical practice (86210)	2.1	194,188	1.05	29.2	27
9	Business administration (82990)	1.9	314,761	1.14	25.8	34
10	Software development (62012)	1.3	208,332	0.99	20.9	64

(b) *How reliant are specific industries on migrants among top 1% workers?*

	Industry (SIC)	Industry Dependency Ratio	Average Income (£)	Migrant Premium	Share of Top 1% Migrants	
					Share	Rank
1	Web portals (63120)	51.0	259,669	0.90	1.0	18
2	Credit bureaus (82912)	47.4	321,500	1.09	0.1	84
3	Security dealers (64991)	44.9	498,245	1.32	1.1	16
4	Financial management (70221)	43.9	373,728	1.10	1.1	14
5	Banks (64191)	39.7	383,301	1.23	17.0	1
6	News agencies (63910)	39.0	217,338	0.96	0.4	35
7	HR management (78300)	38.7	273,508	1.08	0.2	68
8	Hospitals (86101)	37.1	160,412	0.97	6.4	2
9	Fund managers (66300)	36.1	431,620	1.02	3.6	5
10	Support to financial services (66190)	34.7	515,550	1.32	4.1	4

[Notes] This table presents statistics on migrants within 5-digit industries in 2017. "Share of top 1% migrants" is the fraction of all migrants in the top 1% who are in this industry. "Average Income" is the mean total income of top 1% migrants employed in this industry. "Industry Dependency Ratio: share" is the fraction of all top 1% workers in this industry who are migrants. "Industry Dependency Ratio: rank" is the ranking of the industry from highest to lowest fraction of all top 1% workers who are migrants. "Migrant Premium" is the ratio between migrant mean income and native mean income. In Panel (a) the rows are sorted by the "share of top 1% migrants". In Panel (b) the rows are sorted by the "industry dependency ratio".

3.4 Migrants are positively selected

Migrants reach the top at younger ages than natives, but still in middle age. The median age for a native who newly joined the top 1% in 2017 was 48, and the distribution is roughly symmetric around that (Figure 3d). For a migrant joining the top 1% the median was 44, with the distribution skewed to the right. The same distinctive pattern is visible among individuals who were in the top 1% in 2016 and in 2017 (Figure A6a) and in the pooled distribution (Figure A6b).

We have already seen that migrants are increasingly represented at higher income shares, so that within the top 1% a migrant on average has a 20% higher income than a native. Looking at age provides another way to see that migrants are positively selected. Not only are they disproportionately represented at the top of the income distribution but relative to natives at the top they are much younger.

Using a DiNardo, Fortin and Lemieux (1996) decomposition, we see that migrants earn more not because they work in high-paying industries, but because they are positively selected within the industry. This can be seen as the 'migrant premium' shown in the main migrant industries, in Table 1a. Migrants are only slightly more likely to work in extremely high-paying industries, so that industry differences explain roughly 20% of the immigrant-native wage differences at the top. The majority of income differences are driven by top income migrants earning much more than comparable natives within a given industry, again highlighting that they are positively selected.[15]

Existing studies looking at the selection of immigrants use educational qualifications to determine skills (Grogger and Hanson, 2011; Peri, 2016). However, depending where these qualifications were earned, it is not always straightforward to compare these qualifications with those of natives. Moreover, educational qualifications at the top of the income distri-

[15]In Appendix B.1 we use alternative data sources to study whether differences in earnings between natives and migrants can be explained by demographics and industry (jointly), within-household specialisation, or family structure.

bution are often the same and reveal little about selection. We see that on direct economic measures – income, and age given income – top migrants do better than natives.

These results also highlight that a typical top migrant is not someone leaving university in the UK and immediately getting a high-paying job in a bank. Rather they are predominantly early middle-aged individuals who migrate straight into a high-paying job, echoing findings by Azoulay et al. (2020) on the (middle) age of entrepreneurs.

4 Contribution of migrants to the growth in top shares

4.1 Constructing contribution to top

To understand the contribution of migrants to inequality, we decompose the rise in the top 1% share into the contributions of migrants and natives. This is not a causal analysis of the 'impact' of migrants, but a decomposition in the vein of growth accounting (Solow, 1957; Barro, 1999). However, it presents an important stylised fact that quantitative models of top shares should confront: much of the growth in income concentration in the UK comes not from a reallocation of resources within a fixed population, but from a change in the underlying population.

We calculate the contribution of migrants and natives to the growth rate in the top share from year t to year $t+N$ as:

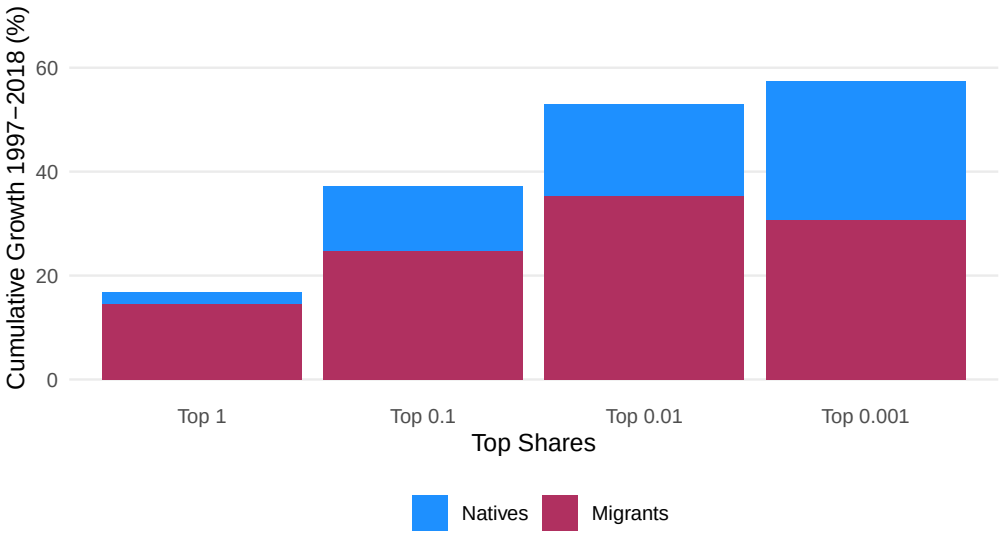
$$\frac{S_{t+N} - S_t}{S_t} = \frac{S^m_{t+N} - S^m_t}{S_t} + \frac{S^n_{t+N} - S^n_t}{S_t}$$

where S_t is share of fiscal income going to individuals in the top percentile in year t, while S^m_t and S^n_t are the shares going to migrants and natives, respectively, in the same percentile. This approach takes as given the change in the top 1% share, and allocates the growth in that income between migrants and natives.

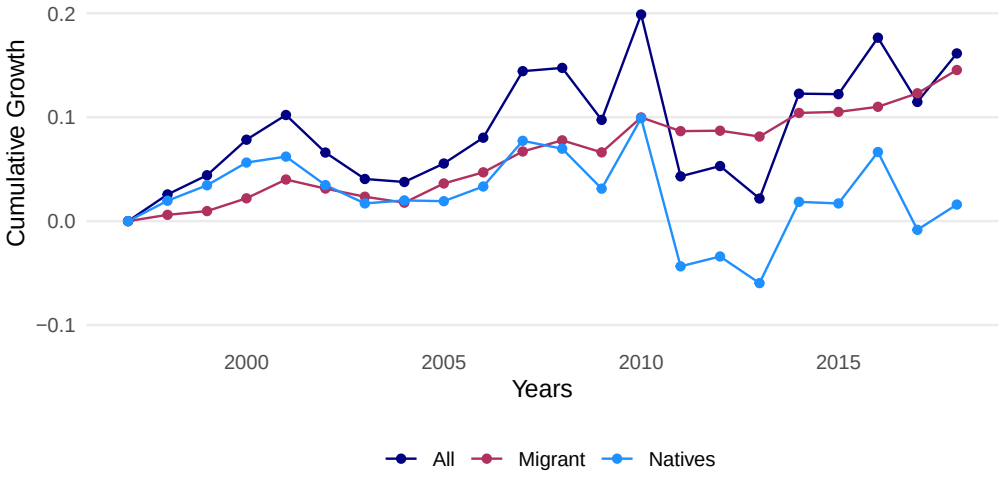
4.2 Migrants contribute almost all of the growth in the 1%

Figure 4: *Migrants account for a large fraction of growth in top shares*

(a) *Decompositon of total growth in top income shares from 1997 to 2018*



(b) *Decomposition of cumulative total growth of top 1% share over time*



[Notes] The figures show the cumulative growth in top shares from 1997 to 2018. Panel (a) shows the decomposition of the total cumulative growth rate between migrants and natives, as described in Section 4.1. Panel (b) shows the decomposition of the cumulative growth rate in the top 1% share from 1997 up to each subsequent year. The unit of analysis is an individual. Income is defined as the sum of earnings and investment income. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

Between 1997 and 2018 incomes at the top of the distribution grew substantially faster than average incomes: the top 1% share rose 16.1% from 12.7% to 14.7%. The top 0.1% (0.01%) share rose faster, growing 35.8% (49.9%) over the period. Migrants account for a substantial fraction of this increase.

Using the above growth accounting framework, we find that migrants account for 90% of the growth in top 1% share from 1997 to 2018 (Figure 4a). Out of the 16.1% increase in the top 1% share, migrants accounted for 14.5pp, while natives contributed 1.6pp. Further up the distribution, migrants accounted for more than 70% of the increase in the top 0.1% and 0.01% shares. This is lower than for the top 1%, as native incomes rose more quickly at these higher fractiles than within the wider top 1%.

Most of this growth comes from migrants being positively selected. Using a decomposition in the manner of DiNardo, Fortin and Lemieux (1996) and Firpo, Fortin and Lemieux (2011), we examine the effect of retaining migrants, but imposing that they come from the same distribution as natives. This allows us to understand, in a mechanical rather than causal sense, the effect of migrants across the whole distribution, by considering how much the top 1% share would have risen in the absence of migrants. We find that when migrants are not positively selected relative to the UK distribution, the top 1% share falls to 11.2% in 1997 and 11.9% in 2018, and growth in this share falls from 1.9pp to 0.6pp. The *positive selection* of top income migration therefore contributes two thirds of the rise in UK top 1% share over this period.

Even without reallocating these migrants into their home country income distributions, removing them from the UK reduces the top share to a level much closer to other European countries: top 1% shares for France, Italy, and Sweden hover between 8-10%.[16] Alvaredo

[16]One might ideally like to also 'add back' UK natives who have outmigrated. Data on these individuals are not available after migration. However, they are unlikely to substantially change the results we see here, for three reasons. First, we see that once they join the top 1%, natives (and migrants) rarely leave the income distribution entirely until close to retirement age, so outmigration among those with high income is low. The small number of top 1% natives who do leave – around 3,000 each year over the 2010s – is dwarfed by the 7,000 migrants who arrive in the top 1%. They also only affect the migrant share to the extent that they are replaced by migrants; based on the migrant share at the next percentile this is only around one in five of them. Second, the number of individuals who leave for study is also very low (7,000 on

et al. (2013) note the different paths of top income inequality taken by English-speaking countries and other European countries. They suggest tax and labour market developments are key explanatory factors, focusing on the impact on the existing population. We highlight that international sorting is an important channel by which these factors operate, driving some of the international difference in top shares. The English-speaking countries Alvaredo et al. (2013) report as seeing the largest rises in inequality are the same ones Kerr et al. (2016) single out as top destinations for high-skilled migrants.

UK top share inequality over the past two decades can be divided into two distinct periods (Figure 4b).[17] All the increase in top income concentration took place over the first decade, up to a peak in 2007. Top shares have remained broadly flat since then, although with significant volatility. This volatility was driven by policy: a pre-announced rise in the top rate of income tax led to 'dividend forestalling', where top income individuals who were owner-managers of companies brought forward dividend payments before the tax rate increase, and later delayed dividends ahead of a pre-announced rate cut (Miller, Pope and Smith, forthcoming).

Over the same period, top migrant incomes have grown steadily, while top native incomes have been much more volatile. The lack of volatility partly reflects the importance of labour income for migrants: this means they did not have the opportunity to engage in the forestalling behaviour undertaken by (some) natives.

The overall top income series has broadly taken its trend from migrant incomes, and its volatility from natives. Right before the financial crisis, migrants accounted for less than half of the increase in the top 1% share from 1997. In the ten years since 2007, the contribution

average over the period, varying between 5,000 and 8,000 (Office for National Statistics, 2020), around 0.01% of the total population), so the departure of potential future high earners does not substantially alter the picture. Third, net overall outmigration rates among natives have been low and stable, with around 0.1% of individuals across the entire population leaving in a given year (Office for National Statistics, 2020), so the composition of outmigrants in terms of their counterfactual probability of reaching the top 1% had they stayed would have had to change dramatically to change the trends we see–it is not enough for potential high earners to be disproportionately likely to migrate, but they must have become increasingly disproportionately likely to do so.

[17]The levels of top shares are shown in Figure A4 in the Appendix.

of migrants continued to increase, doubling to 90% by 2018. A similar pattern is observed further up the income distribution (see Figure A5). The rise in migrants has thus continued even while income concentration remained roughly constant.

5 Discussion

The evolution of top income shares is of interest to researchers, policymakers and the public at large. Most explanations for changes to these top shares implicitly assume a fixed population whose incomes are rising, and the public discussion is conducted in the same way. In contrast, we show that in the UK the share of migrants at the top of the income distribution is large and rising. Almost all of the rise in the top 1% share over the past two decades can be attributed to migrants. Their incomes are largely from employment, focused in the finance industry. By definition, the high rates of net inward migration of top earners observed in the UK cannot be common to all countries. However, for all countries it will be important to consider migration flows when interpreting changes in top income shares: for example in other countries strong net outward migration of top earners could suppress observed increases in top shares.

These trends in migration highlight the importance of the international allocation of talent. Particular industries, including finance and technology, are known to have strong agglomeration externalities. It is perhaps no surprise that migrants should sort internationally to where they can receive the highest returns, with implications for inequality in both source and destination countries. These migrants are also positively selected: they are younger than natives with the same incomes, and are increasingly concentrated at higher fractiles of income. Understanding what these migrants are doing, and what their alternatives are, is key to understanding how responsive they are likely to be to policy, including top tax rates.

Some industries have an extremely high concentration of migrants: they make up almost half of top earners in some parts of finance. Recent nativist policies in the US and UK, which heavily restrict visa availability, are largely premised on the idea that natives can and will fill

those jobs. But the high concentrations by industry mean that, even if this were ultimately possible, transition costs from removing existing migrants are extremely high. Political decisions about the future of the UK visa system are therefore critical in determining what happens to top incomes, and to the industries which rely on top migrants. It is also essential for further work to account for general equilibrium effects of such policies: in the absence of these migrants, would such jobs remain in the UK? And if there is complementarity between high and low skilled workers, what would a reduction in top migrants do to incomes further down the distribution?

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Appendix A Supplementary Online Appendix: Additional Figures and Tables

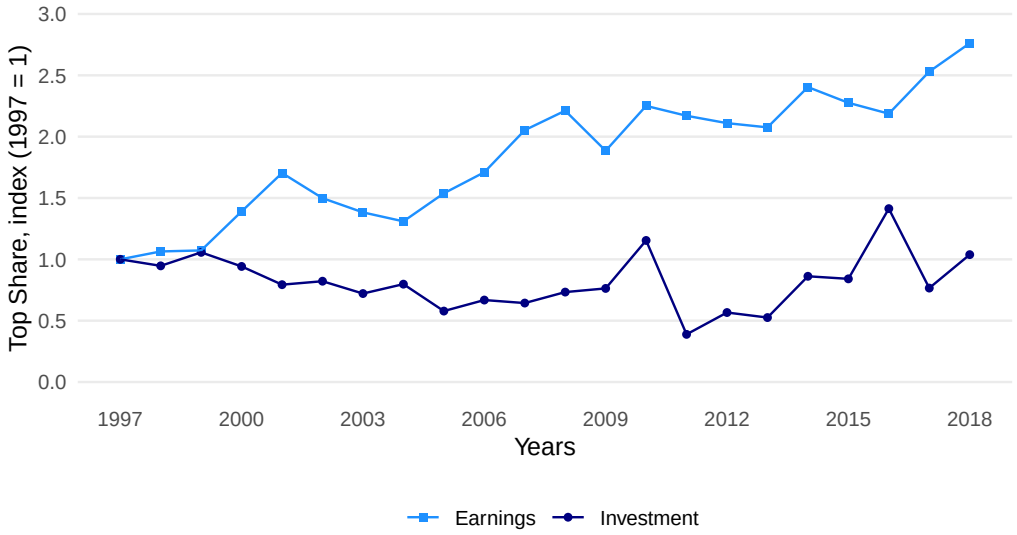
Additional Figures

Figure A1: *Lower level of migrants across income distribution, comparing survey data to administrative data*

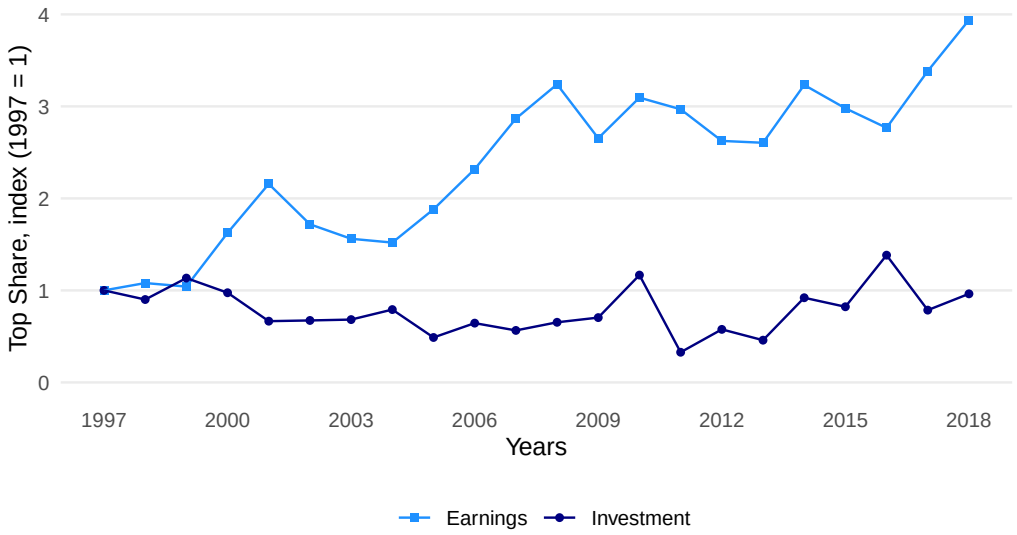
[Notes] The figure shows the proportion of migrants at each decile of the income distribution for the adult population. The series labeled "HMRC" is based on confidential tax micro-data on the population of income tax filers, for tax year 2016-17. It provides the same figures as in Figure 1a, converted to deciles. The lower 40 percent of the adult population do not pay income tax, so are not consistently reported in the administrative data. The series labeled "FRS" comes from the Family Resources Survey – a representative sample of the UK population – using data from the 2016-17 tax year. Deciles are defined relative to the internal weighted population total.

Figure A2: *Migrants' earnings share increased more further up the income distribution*

(a) *Cumulative increase in share of earnings and investment of migrants in top 0.1%*

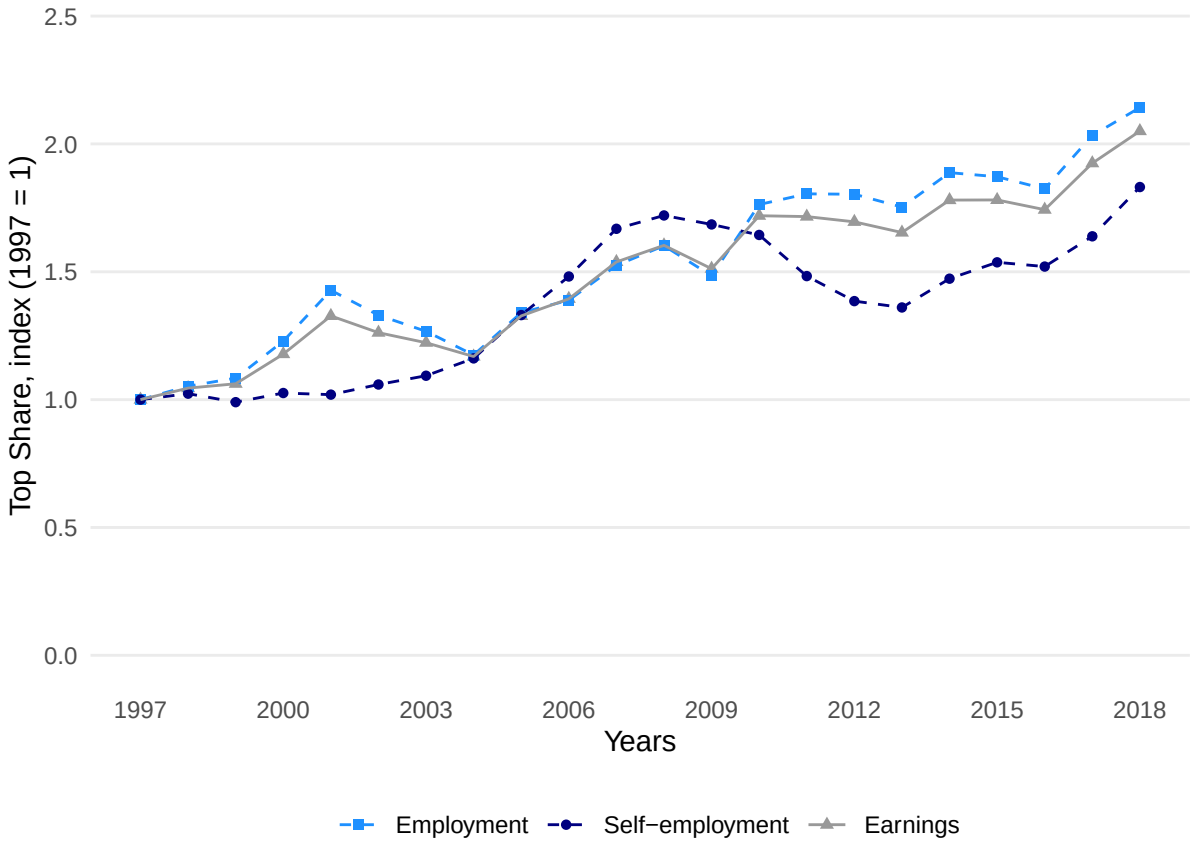


(b) *Cumulative increase in share of earnings and investment of migrants in top 0.01%*



[Notes] The figure shows the cumulative growth rate from 1997 to 2018 for two time series described below for migrants in the top 0.1% (Panel a) and in the top 0.01% (Panel b). The series labeled "earnings" represents the cumulative increase in migrants' earnings share of top share income, and the series labeled "investment" represents the cumulative increase in migrants' investment income share of top share income. Each time series is normalized to 1 in 1997. The unit of analysis is an individual. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

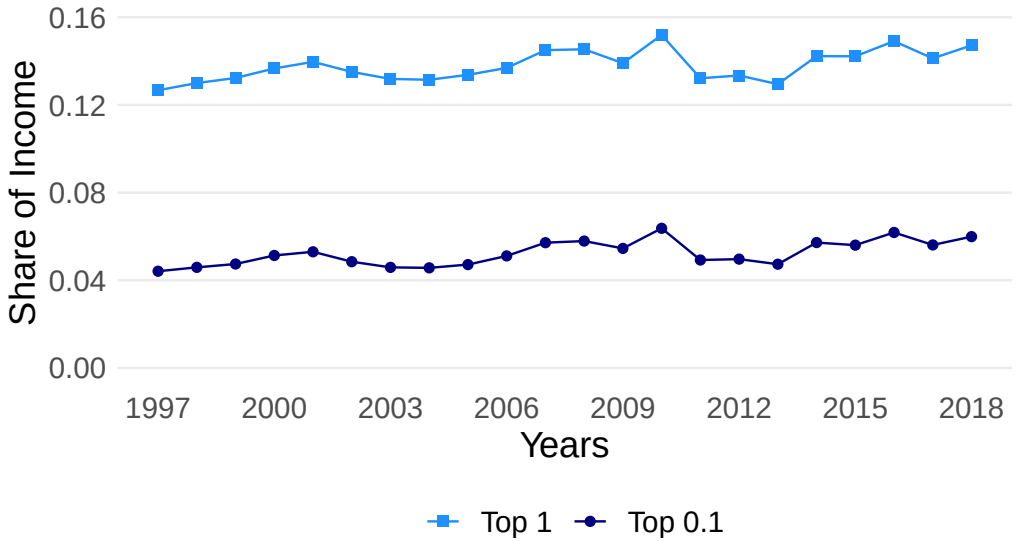
Figure A3: *Rising migrants' earnings share in top 1% comes from both employment and self-employment*



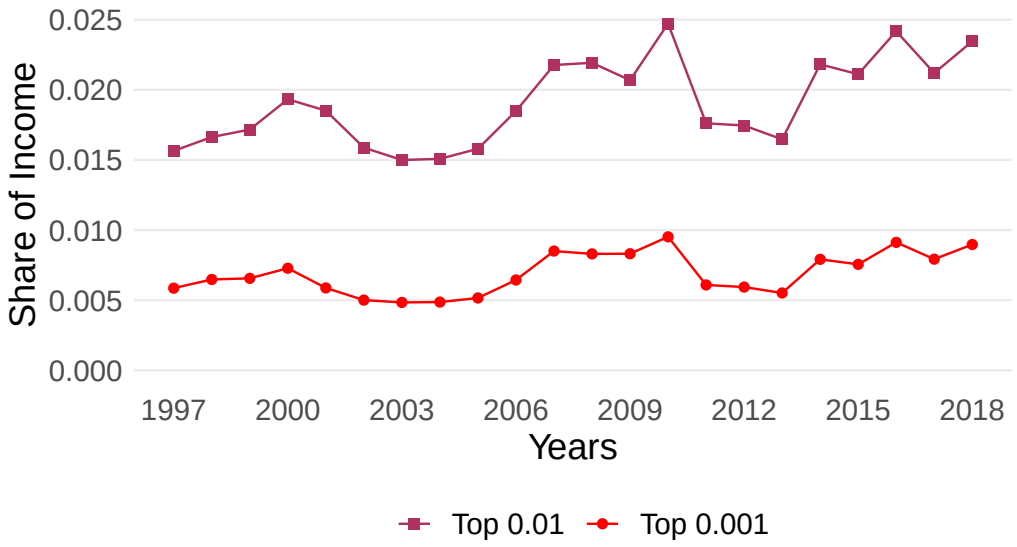
[Notes] The figure shows the cumulative growth rate from 1997 to 2018 for overall earned income ("earnings"), and separately for the two major subcomponents of earned income (employment and self-employment). Each series represents the cumulative increase in migrants' share of top share income from that income source. Each time series is normalized to 1 in 1997. The unit of analysis is an individual. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

Figure A4: *Evolution of top shares*

(a) *Fraction of income going to the top 1% and top 0.1%*



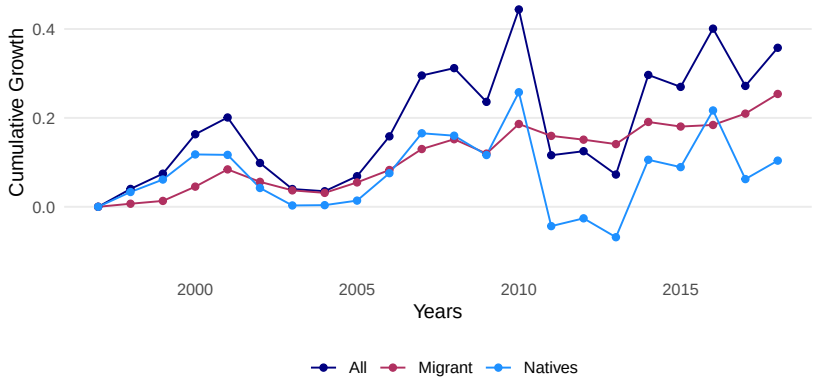
(b) *Fraction of income going to the top 0.01% and top 0.001%*



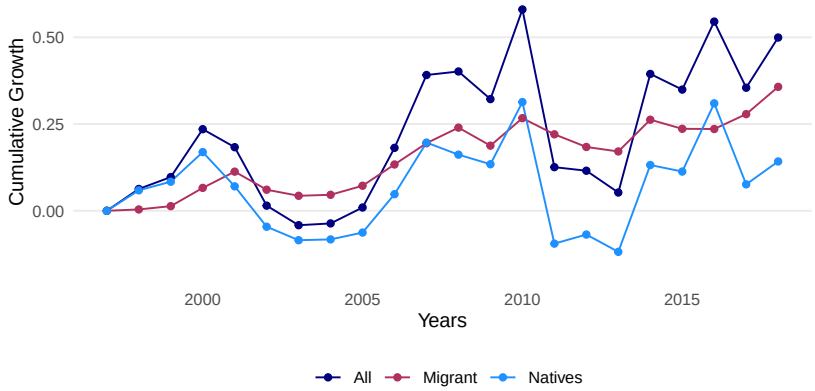
[Notes] The figure shows the share of income going to different top fractiles of the adult population in the UK. Numerators for the top shares are our own calculations based on administrative data from HMRC. The denominator is taken from Advani, Summers and Tarrant (forthcoming), who account for income received both by taxpayers and by the non-taxpaying population. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

Figure A5: *Migrants account for a large fraction of growth in top shares*

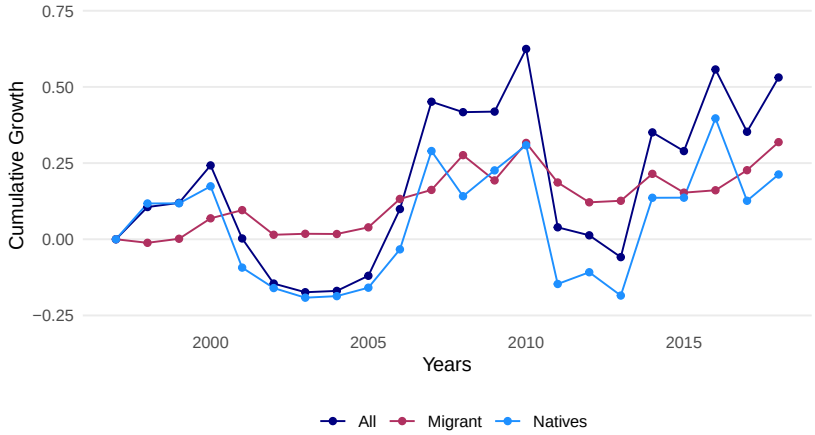
(a) *Decomposition of total growth of top 0.1% share*



(b) *Decomposition of total growth of top 0.01% share*



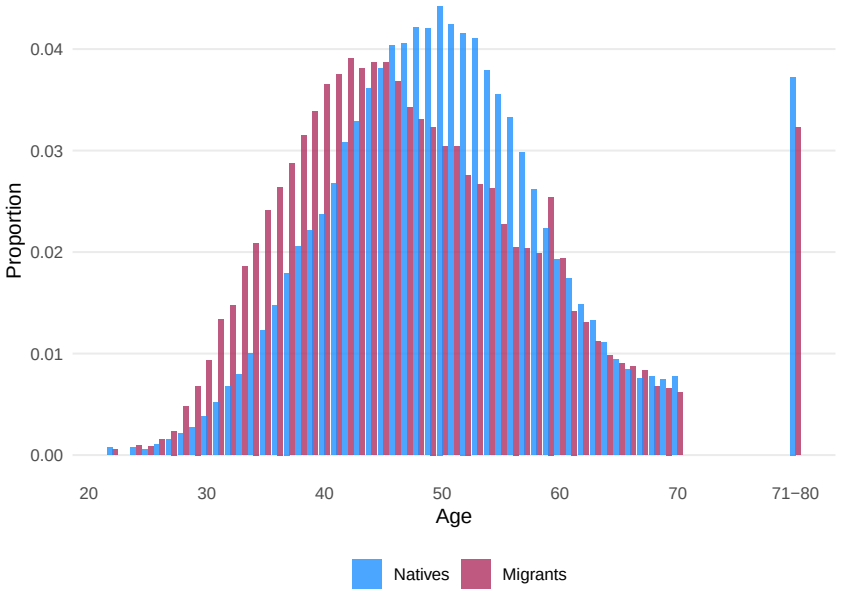
(c) *Decomposition of total growth of top 0.001% share*



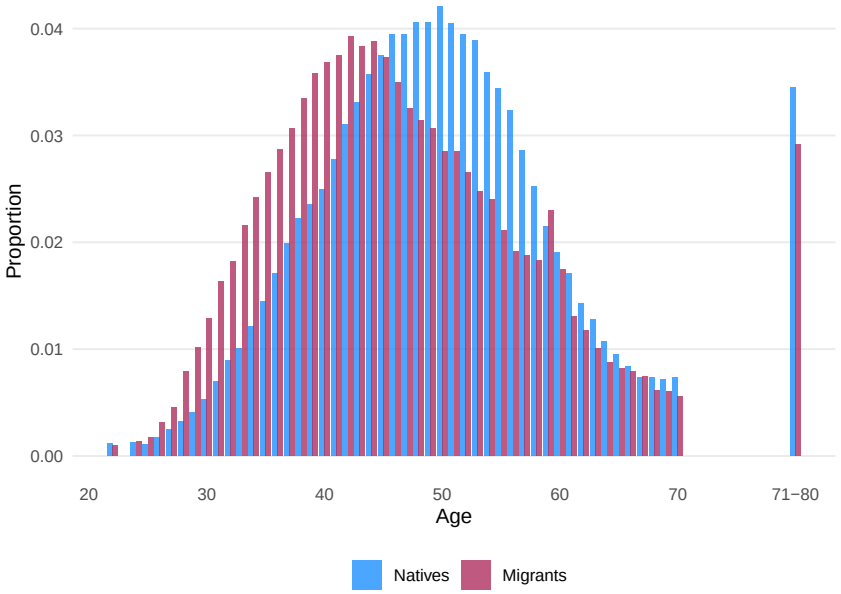
[Notes] The figure shows the decomposition of the cumulative growth rate in the top 0.1% share (Panel a), the top 0.01% share (Panel b), and the top 0.001% share (Panel c) from 1997 up to each subsequent year. The decomposition is described in Section 4.1. The unit of analysis is an individual. Income is defined as the sum of earnings and investment income. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

Figure A6: *Migrants are younger than natives at the top*

(a) *Age distribution for stayers*



(b) *Pooled age distribution*



[Notes] The figure shows the age distribution of individuals in the top 1% of the income distribution in 2017, aged 20-80. Each figure shows the distribution for migrants and natives separately. Panel (a) shows the age distribution for 'stayers': individuals that were in the top 1% in 2016 and remained in the top 1% in 2017. Panel (b) shows the age distribution of all individuals in the top 1% in 2017 wherever they were in 2016. Each bar represents one year of age, except for years of age between 20-23 that are grouped into two-year bins and for ages between 70-80 that are grouped into a single bin labeled "71-80" in the figure, to avoid disclosure. The unit of analysis is an individual. A migrant is identified as a taxpayer who received their National Insurance Number (NINO) at the age of 18 or older. All top shares are defined relative to the total number of individuals aged 18 or older in the population living in the UK.

Additional Tables

Table A1: *Number of non-domiciled migrants claiming the remittance basis*

Year	Count of migrant non-doms in		
	top 0.1%	rest of top 1%	bottom 99%
2009	2,973	6,673	9,127
2010	3,153	7,014	8,547
2011	4,536	10,023	6,149
2012	4,789	11,667	7,607
2013	4,891	11,396	11,334
2014	4,419	12,405	11,561
2015	4,410	12,729	12,252
2016	3,881	12,646	12,404
2017	4,476	12,492	11,915
2018	3,490	11,656	11,131

[Notes] This table shows the number of non-domiciled migrants claiming the remittance basis, and reporting that their foreign investment income is above £2,000. The remittance basis allows eligible individuals to avoid reporting, or being taxed on, investment income arising outside the UK. Non-domiciled migrants are allocated to parts of the income distribution based on fiscal income: this is the same income concept used throughout the paper, and (other than for reasons of non-compliance) is observed by HMRC even for non-domiciled individuals.

Appendix B Supplementary Online Appendix: Characteristics of Top Migrants

Appendix B.1 Differences in characteristics between top migrants and natives

In Section 4.2 we show, using a growth accounting decomposition, that most of the growth in the top 1% share goes to migrants, and using a decomposition in the manner of DiNardo, Fortin and Lemieux (1996) and Firpo, Fortin and Lemieux (2011) we find that the positive selection of top income migration contributes two-thirds of the rise in UK top 1% share. A natural question is whether there are important differences in demographic characteristics between natives and migrants that can explain the differences in their incomes, or whether income differences come from differences in skills.

In Section 3.4 we showed that differences in incomes are largely *within* rather than between industry: differences in the industrial composition of migrant employment can explain at most 20% of the difference in migrant incomes. We also showed that top income migrants are younger, on average, than top income natives. In the absence of other differences, this would support the idea that they are positively selected on skills.

To assess whether there are other important differences between top migrants and top natives, we employ two strategies. First, we control for the full set of non-financial covariates available in the tax data. Second, we use an alternative dataset which is richer in demographic information, but contains less information about incomes.

In our first strategy, we implement a Kitagawa-Blinder-Oaxaca (Kitagawa, 1955; Blinder, 1973; Oaxaca, 1973) decomposition in the tax data. These data contain only a relatively small set of non-financial covariates: age, sex, region, and industry. Table B1 displays the results. Conditional on being in the top 1% by income, mean income is £302,000 for natives; for migrants it is 22% higher, at £368,000. Just over half of this (53%) can be explained by

differences in the observed characteristics of natives and migrants. However, there remains a substantial unexplained component, around half (47%) of the overall difference. These unobserved differences are what suggest to us that some other dimension, which we interpret as skill, drives the differences in incomes between natives and migrants.

Table B1: *Oaxaca-Blinder decomposition of average incomes of top 1% natives and migrants, and amount explained by differences in covariates, 2018*

Average income in top 1%	Mean	Standard error
Migrants	368,000	(4,060)
Non-migrants	302,000	(1,960)
Income difference	66,000	(4,510)
Explained	35,000	(1,630)
Unexplained	31,000	(4,780)

[Notes] The table decomposes, for migrants and natives in the top 1% of the income distribution in 2018, how much of the income difference can be explained by differences in characteristics.

One important set of hypotheses that cannot be tested using the tax data is the possibility that migrants and natives have different family structures or differences in household labour supply choices, that lead to our observations. Perhaps migrants are less likely to have children, or less likely to have their children currently living with them in the UK, so they have more time for work. Perhaps their families specialise more within the household, so that the career of one is prioritised, while the other spouse does not work. Tax data do not contain any information on spouses, children, or hours worked, so we cannot directly test these possibilities.

In our second strategy, we instead use the Quarterly Labour Force Survey to examine these hypotheses. As noted in the main body of the paper, in these data incomes are censored around £100,000, and cover only earnings rather than all income. We therefore compare differences in family characteristics between natives and migrants whose earned income is censored in this way, giving a slightly larger group than the top 1%.

We find few substantial differences between top natives and migrants (Table B2), but what differences there are go in the opposite direction to the potential explanations proposed above. There are no significant differences in the rate of marriage/cohabitation, nor in whether the partner of the top earner works. However, if one were to take the point estimates at face value, top migrants are less likely to have a spouse or co-habiting partner, and where they have a partner that partner is more likely to work. There are significant differences in the form of work. Partners of top-earning migrants are less likely to work part-time than partners of top-earning natives. They are also more than twice as likely to themselves be top earners. Migrants therefore appear to have less scope for specialisation.

Similar results are seen for family structure. There are no significant differences in either the probability of having children, nor in the number of children. Differences in the need for childcare can therefore also not explain differential earning patterns between natives and migrants.

Finally, examining directly the distribution of hours worked, we see no difference in these distributions between natives and migrants. A Kolmogorov-Smirnov test for equality of the two distributions yields a p-value of 0.984, indicating there is no significant difference.

Table B2: *Differences in household characteristics between top migrants and natives, 2018*

	Average		
Variable	Migrants	Natives	P-value
P(Couple)	0.767	0.854	0.067
P(Partner Employed)	0.589	0.643	0.317
P(Partner Works Part-time)	0.173	0.291	0.006
P(Partner Top Earner)	0.144	0.071	0.051
P(Partner Employed|Couple)	0.768	0.753	0.779
P(Partner Works Part-time|Couple)	0.226	0.340	0.029
P(Partner Top Earner|Couple)	0.187	0.083	0.023
P(Any child)	0.512	0.569	0.298
No. of Children	0.907	1.075	0.134
No. of Children|Any child	1.773	1.888	0.296
Observations	100	510	

[Notes] Data come from June 2017-March 2018 waves of the Quarterly Labour Force Survey. The sample includes all individuals who are top earners i.e. whose income is censored at just below £100,000. Individuals are classified as 'migrant' if they report arriving in the UK after the age of 18, and as 'non-migrant' if they report being UK-born or living in the UK before the age of 18. Columns report means of particular covariates conditional on migrant status, and the p-value for a t-test of the hypothesis that these values are the same. 'P(Couple)' is an indicator for the individual having a spouse (married or cohabiting). 'P(Partner Employed)' is an indicator for the individual's partner being employed. 'P(Partner Works Part-time)' is an indicator for the individual's partner working part-time. 'No. of Children' is a count of the number of children.

Appendix B.2 Migrant nationalities

In Figure 1 we show that, among taxpayers, the migrant share declines over most of the distribution, before rising after around the 88th percentile, and jumping up substantially for the top 1%. A natural question is whether migrants in the top 1% come from different countries to those elsewhere in the top 10%, and compared to the rest of the observed distribution.

In Table B3 we list the top 10 nationalities, in rank order, for migrants in the top 1%, the 90th-99th percentiles, and the 40th-90th percentiles. There are three points to note.

First, most of the top 10 source countries for migrants in the top 1% are themselves high income countries. Only India and South Africa are exceptions to this.

Second, we see an almost perfect overlap in the countries which appear in the top 1% and in the rest of the top 10%, albeit with some changes in ordering. The only exception is that Poland is the third largest source country for migrants in the 90th-99th percentiles, but does not appear among the top 10 source countries for migrants in the top 1%, where it is replaced by Canada. A further difference is that the US is the top source country for migrants in the top 1%, but is ranked only 8th for migrants in the 90th-99th percentiles.

Third, there is little overlap between source countries for migrants in the top 1% and those in the 40th-90th percentiles. Only India, Italy and Spain appear in both lists. The presence of Eastern European countries which joined the EU free movement area in the 2000s is particularly noticable for migrants in the 40th-90th percentiles.

Table B3: *Countries with highest number of migrants in 2017, at different parts of income distribution*

Rank	Top 1%	90th-99th Percentiles	40th-90th Percentiles
1	United States	India	Poland
2	France	France	Romania
3	India	Poland	India
4	Italy	Ireland	Italy
5	Australia	Italy	Lithuania
6	Germany	South Africa	Spain
7	Ireland	Australia	Portugal
8	South Africa	United States	Bulgaria
9	Spain	Germany	Pakistan
10	Canada	Spain	Hungary

[Notes] This table presents statistics on the 10 countries with the highest number of migrants in different regions of the income distribution in 2017. Countries are listed in rank order within region of the income distribution. Nationality information comes from the passport used when applying for a National Insurance Number.

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