# Taxation and Migration by the Super-rich*

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**Abstract**

Using administrative data on the globally connected super-rich in the UK, we study the effect of a large tax reform on migration behaviour. Prior to 2017, offshore investment returns for 'non-doms' – individuals tax-resident in the UK but with connections to other countries – were untaxed. People making use of that tax status are strongly concentrated at the top of the income distribution: 86% are in the UK top 1% and 29% in the top 0.1% once overseas investment income is taken into account. A reform in 2017 brought long-stayers, who had been in the UK for at least 15 of the last 20 years, into the standard tax system, reducing their effective net-of-average-tax rate by 18%. We find that emigration responses were modest: our central estimate is that the emigration rate increases by 0.26 percentage points for a 1% decline in the net-of-tax rate, and we can rule out increases larger than 0.4 percentage points. Dispelling fears that the targeted taxpayers were able to circumvent the tax hike, we find large average increases in income reported and tax paid in the UK of more than 150%.

**JEL codes:** F22, H31, J61

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# 1 Introduction

A key barrier to tax reform on wealth is uncertainty about the migration responses of the very wealthy (Jakobsen et al., 2020). In this paper we use administrative data on the globally connected super-rich in the UK to study the effect of a large tax reform on their migration behaviour. UK residents who were either born abroad or born in the UK to a foreign father are able to claim non-domiciled ('non-dom') status. One benefit of this status, carried over from the colonial era, is that non-doms can elect to be taxed on a 'remittance basis': paying no UK tax on offshore investment returns unless they are brought into the UK. A reform in 2017 removed access to the remittance basis for long-stayers, causing an 18% fall in the share of their income they could keep post-tax. A compelling feature of our setting is that this reform differentially affected the average tax rate of otherwise similar individuals, with slightly shorter stayers retaining access to the remittance basis, providing a natural control group for identifying the effects of reform.

We find that this reform led to modest emigration. Our estimated migration semi-elasticity (percentage-point change in the emigration rate with respect to a 1% increase in the net-of-tax rate) for long-stayers is –0.26. Studying the income and tax responses to the reform, we estimate a massive increase in income reported and tax paid in the UK of more than 150%. As expected, this is mainly driven by a spike in offshore investment income reported to the UK tax authority. We also find tentative evidence of overseas investment being brought onshore.

The remittance basis was introduced alongside the Income Tax in 1799. It was originally intended to provide tax deferral on the returns from offshore investment, largely colonial produce, until they were brought onshore to be sold in England (Avery Jones, 2004). Subsequent reforms have converted its function from tax deferral to tax exemption as long as offshore returns are kept offshore. Since 1914, its applicability has been limited to non-doms rather than being available to the whole population. One implication of this is that people living full-time in the UK, working side-by-side in the same roles, can have very different tax treatments for the returns from offshore investment: UK doms pay tax on this investment in the same way as all other investments, while non-doms pay nothing.

There are about 25,000–30,000 non-doms using the remittance basis each year. They are among the highest income, and highest wealth, individuals in the UK. In addition to mean UK income and gains of £370,000, we estimate that they have an average of £420,000 in offshore investment returns. Once overseas investment income is taken into account, 86% are in the top 1% and 29% in the top 0.1% of the UK income distribution. They make up 15–20% of the top 0.1%, highlighting the prevalence of use of that preferential tax status among the super-rich. 40% of those with incomes above £5m have benefited from non-dom status at some point (Advani et al., 2022a).

The majority of remittance basis users have employment as their main income source, although there is a large minority primarily living off investment income. Those who do work are mainly found in 'City-type' jobs in finance and other professional activities including law, consulting, and accounting. Given this, it is unsurprising that more than 80% of remittance basis users live in London and the Southeast of England. The vast majority have nationalities from Western European and 'Anglosphere' countries such as the US and Australia. The most prevalent nationalities outside these groups are Japan and India.

Since the late 2000s, there have been a series of reforms modifying the remittance basis regime. They introduced graduated charges for access to the remittance basis for non-doms who have been resident in the UK for more than seven, twelve, or seventeen years. But continued political discontent led to a reform in 2017 which removed access to the remittance basis for individuals who were born in the UK to a UK father ('Condition A') or had been in the UK for at least 15 of the last 20 years ('Condition B'). This 'deemed dom' reform led to large increases in effective average tax rates for affected individuals, as their offshore investment returns became taxable in the UK. We estimate the effects of the reform on emigration, UK-reported incomes, tax paid, and investment for those covered by Condition B. We do not consider the immigration margin because the reform increased the tax burden on individuals who had been living in the UK for a long time.

We first examine the emigration response to the Condition B reform, comparing those who had been in the UK for 17–20 years to those who had been in the UK for 10–14 years. Pre-reform mobility is high: emigration rates pre-reform are around 4% a year even among the long-stayers. Using a difference-in-differences approach, we find the reform reduced the net-of-average-tax rate for those affected by 17.8%. Our point estimate is that the emigration rate for that group increases by 4.6pp in response. The implied elasticity of the emigration rate with respect to a 1% increase in the net-of-average-tax rate is –0.26, and we can rule out magnitudes larger than –0.4. We estimate a very similar emigration elasticity of –0.29 for remittance basis users affected by Condition B who had been UK-resident for 15–16 of the previous 20 years.

Looking at *who* responds, we have three main findings. First, those with higher UK incomes and tax liabilities, who are typically working in industries that pay more in the UK than elsewhere (Advani et al., 2020), are less responsive to the reform. Second, the elasticity does not vary with additional tax owed: there is no observable non-linearity whereby those who will pay more are even more responsive. Third, responses are stronger for older individuals, who are both closer to retirement and less likely to have school-aged children.

A natural concern is whether the limited emigration response we observe is driven by remittance basis users being able to somehow circumvent the tax increase. To evaluate the effectiveness of the reform, we track the responses of income reported and tax paid

in the UK using a similar difference-in-differences design comparing affected individuals who have been UK-resident for 15–20 years to those who have been in the UK for 10–14 years, conditional on staying in the UK after the reform. We find that UK-reported total income rises by 165% or £400,000 due to the reform, translating into an impact on UK income tax paid of 152% or £124,000. The increase is mainly driven by more offshore investment income being reported to the UK tax authority.

Since the reform removed the tax incentive to keep investments overseas where returns are largely untaxed, we consider the effect on investment into the UK economy. While there is no rise in the share of individuals with UK-source investment income, it increases by more than 50% among those who have already held UK investments. This suggests that the reform led to some onshoring of investment, but only by remittance basis users who had previously invested in the UK economy.

These findings contribute to the substantial debate around the taxation of wealth. There is growing evidence on *within*-country mobility as a response to the taxation of wealth, using variation in rates of estate/inheritance tax (Bakija and Slemrod, 2004; Conway and Rork, 2006; Brülhart and Parchet, 2014; Moretti and Wilson, 2023) and rates of wealth tax (Agrawal et al., 2022; Brülhart et al., 2022). The closest paper to ours is Baselgia and Martínez (2023) who examine the migration responses of wealthy foreigners to the abolition of a special tax status in Switzerland under which they were taxed based on their living expenses. But, as Jakobsen et al. (2020) highlight in their study of responses to wealth taxes, "there is virtually no evidence on [international] migration responses to capital or wealth taxes." The key barriers they cite are access to data on the super-rich, measurement of the relevant average tax rate, and reforms that provide variation both over time and across individuals within a location. Our setting allows us to simultaneously tackle each of these barriers. More than four in five remittance basis users belong in the top 1% and almost one in three is in the top 0.1%. Through comparison to individuals who do not have access to non-dom status we can estimate directly the shift in the average tax rate on income from wealth caused by losing non-dom status. And the reform we use differentially affects individuals at the same point in time depending on a threshold in the length of time in the UK. In contrast to evidence from intranational mobility, which sometimes finds substantial mobility in response to taxes relating to wealth, our estimates of the migration elasticity are relatively small, implying the cost of taxes on wealth in terms of increased emigration is low.

Second, our findings contribute to a broader discussion on mobility among the super-rich, covered as part of a recent survey by Kleven et al. (2020). A paper closely related to ours is Kleven et al. (2014), who use the introduction of a preferential tax regime for high-earning foreigners (around the top 0.5% of the Danish income distribution) to study immigration of high-income workers to Denmark. A strength of their setting, shared by our context, is that there is a large discontinuous change in average tax rates, allowing

precise estimation of elasticities. They find large elasticities (1.5–2) in response to the preferential regime, suggesting high-earning migrants are very responsive to tax rates. Our setting is for a more elite group of individuals, who are at the top of both the income and wealth distributions, and who have large amounts of capital income. On the one hand, this could lead non-doms to be more responsive to tax rates, since their high levels of investment returns are not dependent on remaining in the UK. On the other hand, many are also high-earners, and earn more in the UK than they likely would in the same industry in their home country. We find evidence that the latter effect dominates: responses to the reform are modest, and this is driven by most of our population being tied to the UK for their earnings.

Finally, we contribute to the literature on *who* is taxed. This literature has largely focused on a debate about the tax unit: should taxes be paid at the individual or household level (Boskin and Sheshinski, 1983; Piggott and Whalley, 1996; Apps and Rees, 1999). A separate question, which has been little studied, is which individuals should come into the tax net of any given country. With the wealthiest having an increasingly global footprint and spending substantial time in multiple countries each year, there is a question of what factors should be used to 'connect' them to a country for tax purposes: should taxation be based on where you reside, your citizenship, some concept of your permanent home, or something else? This question is also become increasingly important beyond the very richest, as the move to online working allows place of residence to be divorced from place of work. Our findings highlight the costs of a regime that is based on domicile (permanent home). Unlike residence or citizenship, domicile depends on a taxpayer's (unverifiable) plans about where they consider to be their home. We find that in fact this regime has a high deadweight cost. It leads to substantial loss of tax revenue for government to motivate a relatively small number of individuals to remain in the UK, and those who leave were paying little tax to begin with. Given the presence of a similar scheme in Italy, and other preferential tax regimes for migrants in Belgium, Denmark, the Netherlands, Spain, and Switzerland (among others), it is important to understand the extent to which abolition or reform of these regimes would lead to emigration flows.

The remainder of the paper is organised as follows. Section 2 outlines the policy context, data sources, and key measurement issues. Section 3 describes the high incomes and capital gains of remittance basis users, their economic activities, as well as their global connections and international mobility. Section 4 describes our empirical strategy for estimating emigration responses by the super-rich to increases in their capital income tax rates. It then provides estimates of those elasticities, and evidence on who it is that responds to tax hikes. Section 5 examines how individuals affected by the reform responded in terms of their UK-reported incomes, tax paid, and investments, first setting out our empirical approach and then describing our findings. Section 6 concludes.

# 2 Context and data

## 2.1 Who pays tax in the UK?

Individuals who are resident in the UK are normally liable to tax on their worldwide income and gains. The test for residence takes account of how many days the individual has been present in the UK during the tax year, combined with a series of 'ties' including whether they have work, accommodation or family in the UK. An individual will be automatically resident in the UK if they have been present for 183 days or more. The relevant day count threshold is lower the more ties that an individual has, down to 16 days for those with the most ties.

However, the UK offers special tax treatment to residents who claim that their permanent home (or 'domicile') is abroad. These residents, known as 'non-doms', are entitled to claim the remittance basis of taxation. Being taxed on the remittance basis means only being liable to UK tax on foreign income and gains if these are brought into or used in the UK. The tax benefit can be large: if the individual is only tax resident in the UK and nowhere else, then normally they would not have to pay any foreign tax (other than any irrecoverable withholding tax) in the country of investment either.[1] In effect, the remittance basis therefore provides a complete tax exemption for investments that non-doms hold and spend outside the UK.[2]

There are two main ways in which non-doms can take advantage of the remittance basis whilst still funding their UK lifestyle.[3] The first is by spending any income and gains that they receive from UK sources (for example earnings from UK employment), although these sources are liable to UK tax on the usual basis. The second is to remit foreign funds that they derive from the capital component of their foreign assets (known as 'clean capital'), whilst continuing to accrue the income and gains on those assets tax-free.[4] The latter is particularly advantageous for individuals who have recently arrived in the UK and have a large stock of clean capital still held abroad.

The rules for determining domicile status are complicated, but in practice non-dom status will typically be available to any individual who has arrived in the UK from abroad and who can plausibly claim that they do not intend to make the UK their permanent home. This includes foreign-born migrants, and until recently also included UK-born individuals who had spent time abroad. The factors that are relevant to domicile include

[1] The main exceptions are US citizens and green card holders, who are liable to tax on a worldwide basis irrespective of their country of residence.

[2] Additionally, non-doms are exempt from Inheritance Tax on their foreign assets.

[3] A third way is via gifts from relatives, although there are anti-avoidance provisions to prevent such gifts being funded indirectly out of the donee's own unremitted income or gains.

[4] The rules for separating the capital component from income and gains are highly formalistic and are essentially satisfied by maintaining a separate bank account for 'clean capital', with any interest paid directly into another account.

almost everything about a person's lifestyle as well as their private intentions for the future. Consequently it is very difficult for HMRC to prove that an individual who has arrived in the UK from abroad has become UK domiciled as a matter of law, even if they have been living continuously in the UK for many years.

The overall effect of these rules is that individuals who live in the UK but maintain connections abroad can benefit from a tax exemption that is not available to other UK residents. In practice, the benefits of non-dom status are highly concentrated amongst the wealthy because claiming the remittance basis results in the loss of the individual's personal allowance (which was £11,500 in 2018) such that it is only worthwhile for those with substantial foreign income or gains. There is a widespread perception that non-doms are highly mobile, as a result of their high levels of wealth and the fact that (by definition) they already maintain connections with at least one other country besides the UK.

Advani et al. (2022a) provide evidence on the global connections of non-doms. This global connectedness is important in interpreting our results. The reform we will exploit affects a subset of non-doms, allowing us to compare within this pool, but the pool as a whole is highly globalised, and everyone will have migrated at least once in their lifetime. As we show in Section 3.5, there is also a high probability that these individuals move in and out of UK tax residence from one year to the next. We might then expect this group to be more responsive in terms of migration than individuals who have never moved.

## 2.2 Data sources

We study the population of non-doms using administrative tax data from the UK tax authority (HMRC). We observe the universe of personal tax returns filed for tax years 1997 to 2018, supplemented by data from HMRC's 'Pay-As-You-Earn' (PAYE) system, which covers all income tax payers who did not file a tax return (as well as many who did file a return). By combining the data from tax returns and PAYE records, we obtain full coverage of the universe of UK taxpayers.

Non-doms are required to declare their non-dom status on their tax return where this is relevant to their Income Tax or Capital Gains Tax liability. Other than in exceptional circumstances, non-doms must also report their claim for the remittance basis in each year in which it is used.[5] By linking an individual's tax records across tax years, we can also analyse non-doms' taxable income and gains in years in which they did not claim the remittance basis.

[5]There are two cases where this does not need to be explicitly reported. First, non-doms are not required to make a claim for the remittance basis if their unremitted income and gains are less than £2,000 (s809D Income Tax Act 2007). Second, non-doms are not required to make a claim for the remittance basis if: (i) they have no UK income or gains; and (ii) they did not make any remittances; and (iii) they are not liable to pay the Remittance Basis Charge (s809E Income Tax Act 2007).

For individuals who claim the remittance basis we are not able to observe their unremitted foreign income and gains directly because they are not required to report these sums to HMRC. However, remittance basis users are required to declare on the tax return if their unremitted income and gains were less than £2,000 ('low unremitted income'). Remittance basis users who do not make this declaration are assumed to have unremitted income and gains greater than £2,000 ('high unremitted income'). For the purposes of our analysis, we focus on remittance basis users with high unremitted income.

## 2.3 Measuring migration

Our measure of migration tracks whether or not an individual is tax resident in the UK. If an individual who was previously tax resident in the UK ceases to be resident, we describe them as having emigrated. From the perspective of public finances, this is the most relevant measure of migration since (along with domicile status) an individual's residence status determines how much tax they are liable to pay. However, from the perspective of the wider economy, it is important to note that individuals can become non-resident without leaving the UK entirely, by reducing the number of days that they spend in the UK to just below the relevant threshold. Consequently, when an individual 'emigrates' according to our measure, this entails a discrete change in their tax liability, but (depending on the circumstances) may only entail a small continuous change in their actual UK footprint.

To measure an individual's tax residence for a given year, we pool the available administrative tax data from all sources to identify whether the individual had some presence in the UK. For individuals who filed a tax return, we can be sure that they were tax resident unless they claimed non-residence on the return. For individuals who are only present in PAYE data, we assume that they were tax resident unless they received income above the personal allowance without paying any Income Tax, which indicates that they received an 'NT' (no tax) tax code that is generally only available to non-residents. Where an individual is not present in any of our data sources, we treat them as non-resident for that year unless they are reported as deceased or under the age of 18.[6]

To measure the number of years remittance basis users have been UK-resident for over the previous 20 years, which is relevant to determine who is affected by Condition B of the 2017 deemed dom reform, we also incorporate information on year and month of arrival in the UK. This is reported by non-domiciled taxpayers in the corresponding tax form.

[6]Individuals who are only present in PAYE data and have zero or missing income are treated as non-resident as they have most likely not been deleted from the payroll information even though they do no longer work at that employer.

## 2.4 Measuring income

To measure an individual's income and gains, we use data collected from the tax return, or PAYE record where no tax return was filed.[7] Our standard measure of income includes all taxable income from employment, self-employment, partnerships and pensions ('earnings'), and all taxable income from investments including interest, rent, dividends ('investment income'). The measure of gains includes all taxable gains, which broadly consists of realised gains on most types of asset except the individual's main home and excluding any disposals to spouses or upon death ('gains').

For individuals who are UK resident and domiciled, income and gains are reported and taxed on a worldwide basis. Non-doms (individuals who are UK resident but not domiciled in the UK) are also required to report their worldwide income and gains except in years when they are claiming the remittance basis. However, non-doms who claim the remittance basis ('remittance basis users') are only required to report their UK-source income and gains, their foreign earned income (even if this is not taxable in the UK),[8] and any foreign investment income and gains that they have remitted to the UK in that year.[9] Consequently, we do not directly observe their unremitted foreign investment income and gains.

We impute the unreported income and gains of remittance basis users by comparing their investment income and gains to those reported by UK domiciled taxpayers who have similar observable characteristics. Full details of our methodology are described in Appendix B. The approach proceeds in three main steps.

First, we estimate a lower bound for unremitted investment income and gains derived from the fact that claiming the remittance basis requires users to forfeit their standard UK tax-free allowance and also pay a fixed charge (known as the 'Remittance Basis Charge') if they have been resident in the UK for more than seven years. For individuals who have not yet reached seven years of residence, we predict the probability that they will pay the Remittance Basis Charge in the future and estimate a lower bound for their current unremitted income on this basis. To obtain a lower bound on *worldwide* investment income and gains, we sum up the remittance basis user's investment returns reported in the UK (i.e., amounts that have been remitted) and the lower bound on unremitted returns.

[7] A tax return must be filed if the individual has any taxable income or gains that have not already had the appropriate amount of tax deducted at source, or if their total taxable income exceeds £100,000 irrespective of tax already deducted at source.

[8] Foreign earnings are an exception to the general rule that income and gains only need to be reported on the tax return if they are taxable. Figure 2a shows mean reported foreign earnings of remittance basis users stacked on top of unreported offshore investment income and gains.

[9] This includes any income and gains that arose in a previous tax year whilst the individual was UK resident and using the remittance basis.

Second, we use the universe of personal tax records to select a pool of UK domiciled taxpayers ('UK doms') who (i) reported at least as much investment income and gains as the remittance basis user's lower bound on worldwide investment returns (computed in Step 1); and (ii) who look most similar to the remittance basis user based on their reported earnings, local area house price, age, sex, and industry. Our main approach here is regression adjustment with inverse probability weighting (Wooldridge, 2007), although results are similar when simple regression adjustment is used. The approach assumes that an individual's total investment income and gains can be predicted based on these other factors and that (taxable) investment income and gains are fully observed for UK doms.

Third, we impute to the remittance basis user the average investment income and gains reported by UK doms within the relevant comparison pool. This amount is substituted in place of any investment income and gains actually reported by the remittance basis user. To give their total worldwide income and gains, we add their actual reported earnings (including any foreign earnings not taxable in the UK) since these are fully observed.

We use an analogous approach to estimate the additional tax that would be paid if the remittance basis were abolished. This has the advantage that it accounts for tax planning and avoidance strategies that would likely be used if the remittance basis were removed, rather than assuming that the headline tax rates would be paid, since it estimates tax by comparison to similar UK doms who will already be using the types of strategies that non-doms may later wish to take.

We note that there are some respects in which our approach may underestimate the actual missing investment income and gains of our population of remittance basis users with high unremitted income. These are discussed in detail in Appendix B. To the extent that such underestimation occurs, this would lead us to overestimate the responsiveness of remittance basis users to the reforms that we are studying.

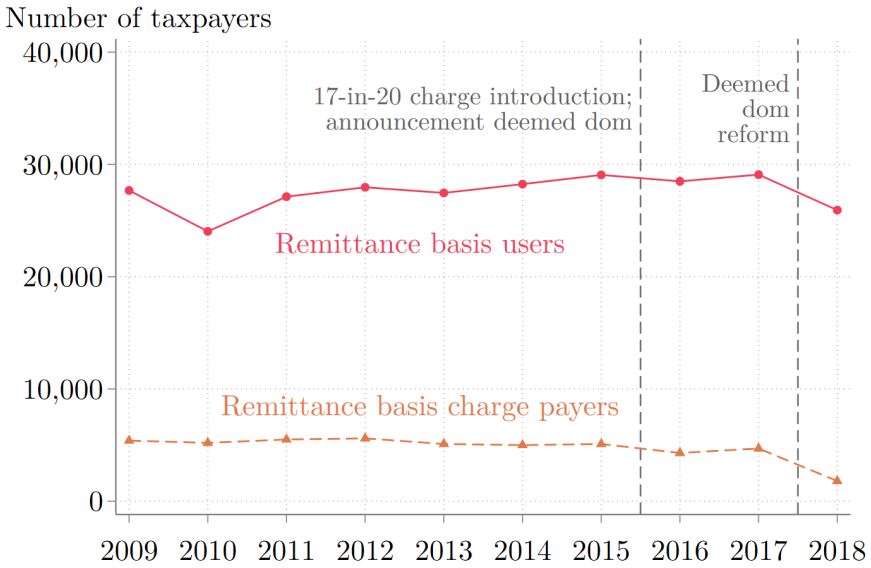
# 3 The UK's globally connected super-rich

We document how the number of individuals opting for the remittance basis has evolved over time and characterise this group in terms of their incomes, economic activities, global connections, and migration behaviour. We generally use 2015 as the reference year for the cross-sectional results because it is the final tax year before the announcement of the main tax reform we study in Sections 4 and 5.

## 3.1 Remittance basis users

Figure 1 shows the evolution of the number of people who claim the remittance basis and the number of taxpayers who pay a charge to access this tax status since 2009. The time

**Figure 1: Number of remittance basis users and charge payers**




**Notes:** Number of individuals claiming the remittance basis and paying a charge to access the remittance basis, respectively. Remittance basis users are individuals whose domicile is not in the UK, and who elect to benefit from remittance basis tax treatment, exempting offshore returns as long as they are not repatriated to the UK. The count of remittance basis charge payers is taken from HMRC Official Statistics. The number of remittance basis users is scaled to be consistent with HMRC statistics.
**Source:** Authors' calculations based on HMRC administrative datasets and HMRC Official Statistics on non-domiciled taxpayers in the UK.

series starts in 2009 because it is the first year in which HMRC required non-domiciled taxpayers to explicitly declare using the remittance basis. The number of non-doms making use of the remittance basis has been relatively stable over time, varying between 24,000 and 30,000, although in 2018 we observe a drop from 29,000 to 26,000. Similarly, the number of remittance basis charge payers has consistently been between 4,000 and 6,000, but then fell to around 1,800 in 2018.

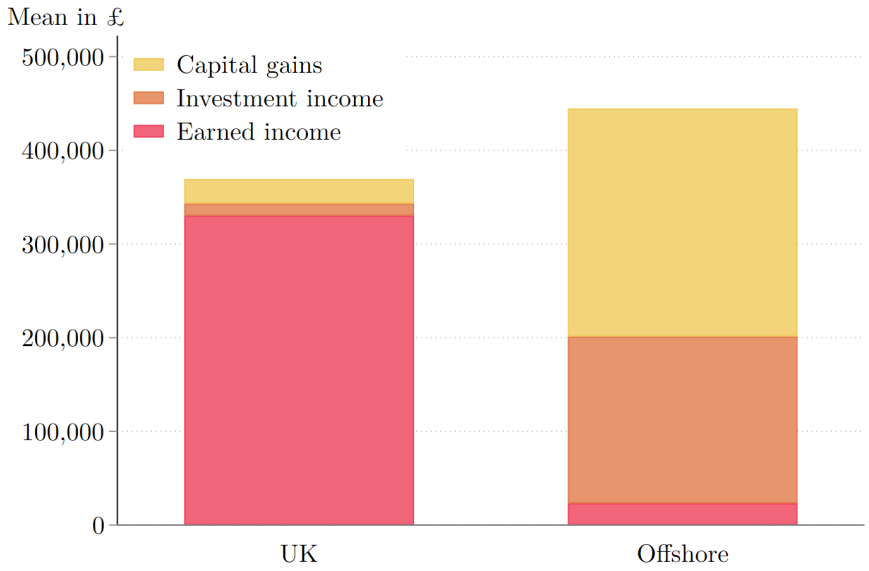
The drop in remittance basis users and charge payers in 2018 is plausibly due to the deemed domicile reform implemented in that year, which removed access to the tax status for certain individuals (see Section 4.1). The key question is whether this drop is driven by people ceasing to claim the status, or people leaving the UK. We return to this question when analysing the emigration responses to this reform in Section 4.

## 3.2 Income and capital gains

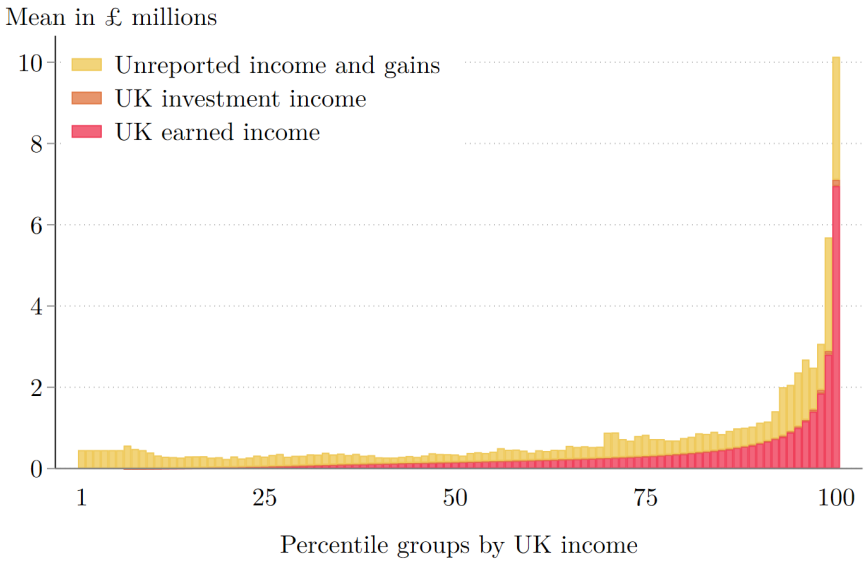
Remittance basis users have, on average, substantial income and wealth (Figure 2a). Their average *UK* income and gains total £370,000. In addition, we estimate that remittance basis users have an average of £420,000 in unreported returns overseas. Cumulatively, mean worldwide income and gains comfortably exceed the threshold for belonging to the UK's top 0.1% by income and gains. They are also enough to put someone into

**Figure 2: Income and capital gains of remittance basis users**

(a) Mean, split by type and whether UK or offshore




(b) Mean across the distribution of UK income




**Notes:** Panel (a) shows mean earned income and investment returns for remittance basis users in 2018, split by whether arising offshore or in the UK. Panel (b) shows mean offshore investment returns as well as UK earned income and investment income for remittance basis users in 2018. Means are computed separately for each percentile bin of the distribution of UK total income among remittance basis users. About 6% of remittance basis users have zero UK income so they are combined in the bottom bin. Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK. UK income and gains, including foreign-source income and gains remitted to the UK, as well as foreign earnings are reported in tax filings. Unremitted offshore investment returns are estimated by comparison to UK domiciliaries with similar characteristics, who – unlike remittance basis users – have to report worldwide income and gains (see Appendix B).
**Source:** Authors' calculations based on HMRC administrative datasets.

the top 0.1% of the UK wealth distribution, based on capitalising the mean worldwide investment returns of £460,000 (Advani et al., 2022b).

One striking finding is that 56% of remittance basis users are in the UK's top 1% and 15% in the top 0.1% even when only taking into account income reported in the UK. Including overseas investment income, we estimate that 86% are in the top 1% and 29% in the top 0.1%. Non-doms are therefore not only globally connected, but clearly among the richest individuals.

Conversely, claiming the remittance basis is very common among those who have high levels of income. Before the 2017 reform, 15–20% (including overseas investment income) of the top 0.1% claimed the remittance basis in any given year, compared with 3–4% in the rest of the top 1%, and just 0.01% in the bottom 99%. In related work, we have documented that 40% of those with income above £5m have at some point claimed non-dom status (Advani et al., 2022a). Among high-income migrants, who have the most plausible claim to having a foreign domicile, this share exceeds 80%. This highlights the ubiquity of this tax break among those at the top of the income distribution.

Consistent with the detrimental incentives created by taxing UK investment but not foreign investment, most investment returns for remittance basis users come from overseas. They receive more than ten times as much investment income and gains from abroad as from inside the UK (£420,000 vs. £39,000). Around two-thirds (64%) report no investment income in the UK at all, but high levels of overseas investment income are common across the distribution of UK-reported income (Figure 2b).

Although they have large investment returns, remittance basis users also have substantial amounts of labour income, more than £350,000 on average. Around 43% of worldwide income and gains come from labour.

Looking at the relationship between offshore investment returns and income reported in the UK (from earnings and investment), we see a U-shaped pattern (Figure 2b). Remittance basis users with high UK reported income are most likely to also have high unreported income and gains: the top two percentiles have on average £2.9m in unreported income and gains on top of their UK income of £5m. Across the top decile the average is £1.4m. However, average unreported income and gains in the bottom decile of UK income (£460,000) is higher than for any decile other than the top. Despite reporting UK total incomes below £5,000, these remittance basis users are living in areas with high house prices (see Figures A2 and A3) and (some) are willing to pay a large lump sum in tax (the remittance basis charge). The implication is that they have substantial overseas wealth, and live off clean capital transferred to the UK from an overseas account or sustained transfers from non-UK resident family members.

**Figure 3: Economic activity of remittance basis users**


**Notes:** Panel (a) shows the share of remittance basis users by main source of worldwide income in 2015. Main source of income is identified from largest income source across employment, self-employment, partnership, pension, and investment income. 'Owner-managers' are individuals whose largest income source is dividends and are also directors of closely held companies, which are defined in UK tax law as firms with five or fewer directors and/or shareholders. Panel (b) shows the share of remittance basis users by industry in 2015. Industry classification based on the Standard Industrial Classification (SIC) 2007 version. Individuals report their employer, or (in the case of self-employment or partnership income) their business description on their tax return, and HMRC convert these fields to a SIC code. We assign individuals with multiple different sources (or multiple employers) to the SIC code associated with the single largest earned income source which has a non-missing SIC code. We exclude individuals with investment or pension income as their single largest source (except in the case of owner-managers of closely-held companies), and people with no employment income (7,400 remittance basis users, representing 25% of the total). Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

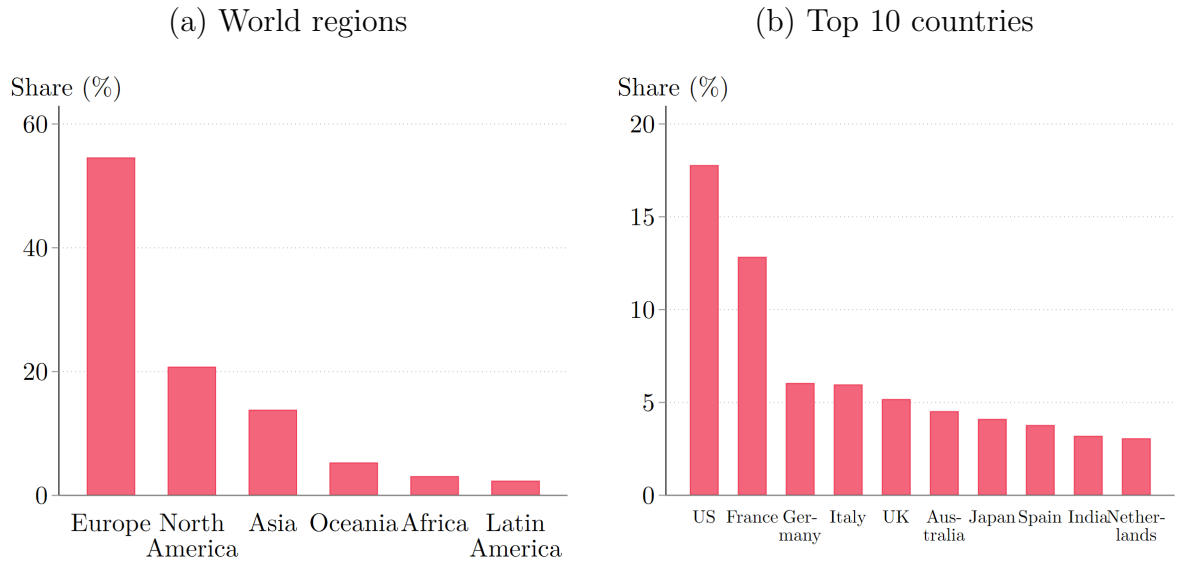
## 3.3 Main source of income

Most remittance basis users have income from labour as their main income source (Figure 3a). This largely comes from working for someone else: 58% have either employment or partnership as their main income source, with only 1% being self-employed or owner-managers of an incorporated business.

Consistent with Section 3.2, among the large minority (41%) whose main source of income is from investment, this is concentrated offshore. Excluding offshore income, only 13% have investment income as their main source, and a further 4% have no UK income at all (Figure A1). 2% have pension income as their main source.[10]

[10]The overwhelming majority of remittance basis users are prime working age: only 7% are younger than 30, 83% are 30–59 years old, and 10% are 60 or older. The share of women and men is 25% and 75%, respectively.

**Figure 4: Nationality of remittance basis users**




**Notes:** Panel (a) shows the nationality share of remittance basis users by world region in 2015. Panel (b) shows the country share of remittance basis users focusing on the top ten countries with the largest number of remittance basis users in 2015. Nationality as reported in Migrant Worker Scan (administrative microdata on migrant workers), supplemented by information from tax form SA109. For individuals reporting both a UK and foreign nationality, we use the foreign nationality. We exclude individuals whose nationality we do not observe in the data (8,700 remittance basis users, representing 30% of the total). Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

Working remittance basis users are strongly concentrated in 'City-type' jobs. More than half work in finance and other professional jobs such as lawyers, consultants, or accountants (Figure 3b). These are industries which pay particularly well, relative to what individuals can earn in other countries (Advani et al., 2020). Table A1 provides a further breakdown into more detailed industry categories.

This industrial composition means that remittance basis users are concentrated largely around London (68% of all remittance basis users) and the Southeast of England more generally (a further 15%), where the majority of these types of jobs are located (Figures A2 and A3). Where there are (smaller) clusters of non-doms elsewhere in the country, these are similarly focused around high-paying local industries: sport in Manchester, higher education and research in the university cities of Oxford and Cambridge, the petrochemical industry where UK North Sea oil is processed in Aberdeen (Advani et al., 2022a).

## 3.4 Global connections

While remittance basis users come from across the world, four out of five arrivals with known nationality information come from Europe or the 'Anglosphere' of English-speaking countries (Figure 4). In Europe, France, Germany and Italy are the largest source countries, while the US and Australia are the main Anglosphere countries. Japan and India are the other two overseas sources of remittance basis users in the top 10. With the exception of the US, the UK is largely better paying for the high-end 'City jobs' common among remittance basis users, making the UK relatively attractive for those coming to work.

A small minority hold a UK passport. Those could be foreigners who have become naturalised or people born in the UK to a foreign father. This group will also include some individuals born in the UK who lived abroad for an extended period. Hence, even those with UK nationality will have strong international connections. We therefore next consider evidence on the baseline mobility of remittance basis users.

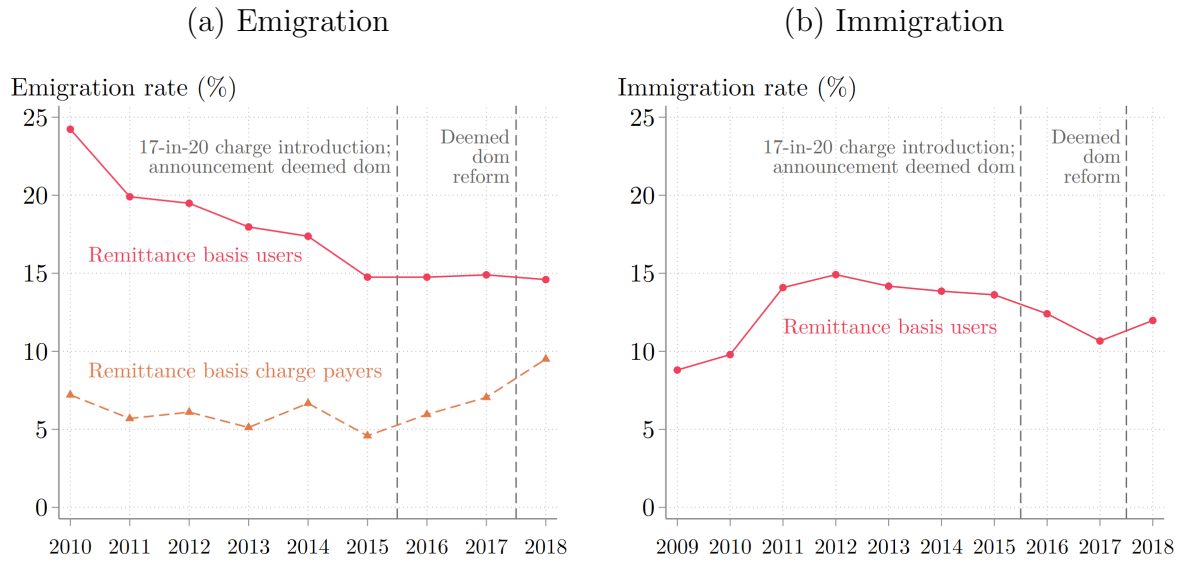
## 3.5 Emigration and immigration

Mobility among remittance basis users is high. In recent years, more than 15% of individuals claiming the remittance basis emigrated from the UK from one year to the next (Figure 5a). This number is lower, at 5–10%, once we focus on individuals who have been in the UK for at least seven out of the previous nine years and thus pay a charge to access the remittance basis.

Looking at flows inwards, 10–15% of remittance basis users present in the UK in any year arrived in the previous year (Figure 5b).

This high mobility, at least from the perspective of tax residence, makes remittance basis users a particularly interesting group to study. One might assume this group to respond more sensitively to a large change in their tax rate by emigrating. We test this conjecture in Section 4.

**Figure 5: Mobility of remittance basis users**




**Notes:** Panel (a) shows the emigration rates of remittance basis users and remittance basis charge payers. Panel (b) shows the immigration rates of remittance basis users. We do not show immigration rates for remittance basis charge payers because only individuals who have been in the UK for at least 7 years must pay a charge to access the remittance basis. Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK. Remittance basis charge payers are the subset of remittance basis users who are required to pay a lump-sum fee to benefit from the remittance basis because they have been in the UK for at least 7 of the previous 9 years.
**Source:** Authors' calculations based on HMRC administrative datasets.

# 4 Migration responses to a large tax increase

The remittance basis regime has been modified multiple times over the past 15 years. Most of the reforms have either made it more expensive to claim the remittance basis or have restricted access for some individuals altogether. We use exogenous variation from Condition B of the 2017 deemed domicile reform, which removed access to the remittance basis for taxpayers who had been UK-resident for at least 15 of the last 20 years, to study the migration response to a large tax hike. Our investigation focuses on the emigration channel because the reform was aimed at long-stayers and did not affect new arrivals.

## 4.1 Tax reforms

Before tax year 2009, the rules for claiming the remittance basis were simple and generous. There was no need to explicitly claim the remittance basis on the tax form; declaring non-domiciled status was sufficient. Remittance basis claimants neither lost their tax allowances nor were they required to pay a charge.

The first significant reform of the tax regime was implemented in 2009. To access the remittance basis, taxpayers were newly required to make a formal claim when filling out the tax return. The reform also introduced a charge of £30,000 for individuals choosing to be taxed on the remittance basis if they have been tax resident in the UK in at least 7 of the 9 previous years ('7-in-9 charge'). The charge takes the form of a lump-sum payment to the tax authority and can be paid using funds from a foreign bank account without that payment being considered a remittance to the UK. Further, the 2009 reform removed the Income Tax personal allowance and Capital Gains Tax allowance for remittance basis users. In 2013, the remittance basis charge was increased to £50,000 for people who have spent at least 12 of the preceding 14 years in the UK ('12-in-14 charge'). The next reform in 2016 brought about two additional changes to the remittance basis rules. First, the 12-in-14 charge was raised to £60,000. Second, a charge of £90,000 was introduced for individuals who have been UK resident in at least 17 of the previous 20 years ('17-in-20 charge').

The 'deemed dom' reform that came into effect in 2018 limited access to the remittance basis. Taxpayers meeting one of two conditions are 'deemed to be UK domiciled' for tax purposes, removing their right to claim the remittance basis. Condition A of the reform holds that people born in the UK to a father with a UK domicile ('UK domicile of origin') are to be treated as domiciled in the UK, even if they have acquired a different domicile of choice overseas under general law. Under Condition B, individuals who have been resident in the UK for at least 15 of the previous 20 years ('long stayers') are deemed UK domiciled. As a consequence of Condition B, the £90,000 charge became obsolete. The £30,000 and £60,000 charges remain in place. The reform did not entirely abolish the special tax treatment of non-doms meeting Condition B because foreign income and gains retained in a non-UK resident trust continue not to be taxed.[11] The respective aims of the deemed dom reform were to (a) ensure that people born in the UK to parents domiciled in the UK cannot claim a foreign domicile after living a few years abroad and (b) abolish "permanent non-dom tax status", in the words of then-Chancellor George Osborne. By bringing the offshore investment returns of deemed doms into scope of UK tax, the 2017 reform induced a large tax increase for the affected individuals.

The deemed dom reform was announced by the Conservative Government in the Summer Budget in July 2015. Both Condition A and Condition B, as well as key features of both reforms, were announced in the Budget, although details and draft legislation were not published at the time. These were established through a drawn-out process over the next two years. A first technical consultation that did not include the trust protections was published in September 2015. A a further consultation in August 2016 then did include exemptions for offshore trusts. The final consultation response and

[11]By contrast, these trust protections are not available to those who are deemed domiciled under Condition A.

first draft legislation followed in December 2016. The second and third draft legislation were published in January and March 2017, respectively. The Finance (No.2) Act 2017, including the deemed domicile reforms, finally received Royal Assent in November 2017 – in the middle of tax year 2017-18 to which the changes already applied.

The timing of the legislative process has several implications. First, since there were 20 months between announcement and implementation, affected remittance basis users may have responded in anticipation. We check in our empirical analysis whether this was the case, by looking at changes in emigration rate after announcement but before implementation. Because of this 20-month run-up period, a *lag* in the potential emigration response after the reform seems less likely. Nevertheless, when we receive data for later years, we will check whether there is a lagged response due to the delay in getting the Finance Bill formally passed.

The uncertainty from the delayed and drawn-out policymaking process could go either way: Because the final design of the reform was more favourable for long-stayers than initially announced, some individuals could have overreacted in anticipation and left the UK. On the other hand, some tax professionals had expected the reform not to be passed at all in which case they may have erroneously advised their clients to stay put. When the data for later years become available, we will be able to study the long-response to the reform that is unaffected by these short-term considerations.

## 4.2 Empirical strategy

We focus on Condition B of the deemed domicile reform which removed access to the remittance basis for the subset of non-domiciled taxpayers who have been in the UK for at least 15 of the last 20 years. Their average tax rate increased substantially because their offshore investment income, in addition to their UK income, became subject to UK income tax as a result (see Section 2.4). To estimate the mobility response to this tax increase, we use a difference-in-differences design, comparing their emigration rates before and after the reform to those who have spent slightly less time in the UK over the previous two decades and thus did not face a tax change. The identifying assumption is that the emigration rate of the treatment group would have followed the same trend as the emigration rate of the control group in absence of the reform. Provided that the parallel trends assumption holds, we can estimate the effect of changes in average tax rates on emigration decisions by the super-rich.

Because the deemed dom reform was announced in the same tax year as the 17-in-20 charge was introduced, we split the treatment group into those who were UK-resident for 17–20 of the last 20 years (and therefore affected by both the 17-in-20 charge and the deemed domicile reform) and those who were UK-resident for 15–16 of the last 20 years who were only affected by the deemed dom reform.

As a natural control group, we use remittance basis users who have been UK-resident for 10–14 of the previous 20 years. In choosing a control group, we have to trade off selecting a group who has been living in the UK for a similar number of years as the treatment group, which makes it more likely that their emigration rate evolves in parallel, with choosing a group that is large enough to give us power to obtain precise effect estimates. Figure A6 shows that our migration elasticity estimates are not sensitive to a range of control group definitions. To avoid contamination, we remove individuals affected by Condition A from the sample.

We study the migration effects at the aggregate level, collapsing the observations into group-year cells. We compute the emigration rate in the treatment and control groups in a given year as the share of individuals who were UK-resident and claiming the remittance basis in the previous year but are not UK-resident in the current year. After finding empirical support for the parallel trends assumption in the time series of the emigration rates (see Section 4.3), we estimate the emigration semi-elasticity using an instrumental variable difference-in-differences approach:

$$E_{gt} = \eta \times \log(1 - \bar{\tau}_{gt}) + \mu_g + \lambda_t + \varepsilon_{gt}, \tag{1}$$

where $E_{gt}$ is the emigration rate in group $g$ in year $t$, $\mu_g$ denotes group fixed effects, $\lambda_t$ captures year fixed effects, and $\varepsilon_{gt}$ represents the idiosyncratic error term. The log net-of-average-tax rate in group $g$, $\log(1-\bar{\tau}_{gt})$, is instrumented by the (static) difference-in-differences treatment indicator, $\mathbb{1}\{t \geq 2018\} \times T_g$, where $T_g$ is the treatment group indicator defined above. Thus, we only use the tax change induced by the reform to estimate the elasticity. The group fixed effects absorb time-invariant differences in the emigration rate levels between treatment and control group. The year fixed effects control flexibly for any shock from changes in policy or economic conditions that affect treatment and control groups similarly. The target parameter $\eta$ is the semi-elasticity capturing the effect of a one-percent increase in the net-of-average-tax rate on the emigration rate in percentage points. As a shorthand, we call this the '(e)migration elasticity' in the remainder of the paper.

Since we cannot directly observe the worldwide income of remittance basis users, the calculation of the net-of-average-tax rate builds on our estimates of offshore income and the income tax hypothetically paid if their worldwide income was taxable in the UK as a consequence of losing access to the remittance basis (see Section 2.4). We estimate the tax burden in the treatment group after the reform as the income tax liability that would be due if pre-reform worldwide income was taxable in the UK. In the treatment group before the reform and in the control group, the tax burden is measured as the observed income tax paid in the UK (under the remittance basis) as a share of worldwide income.

Hence, the tax variation we exploit is not endogenous to post-reform behaviour of the treated individuals.

### 4.3 Migration response to tax increases

Studying emigration of remittance basis users, we see three main facts (Figure 6).

First, baseline mobility for this group is high. The control group had an emigration rate of about 8% pre-reform. A similar time trend is seen for the treated, though at a lower level (around 4%), as might be expected for individuals who have remained in the UK for longer.

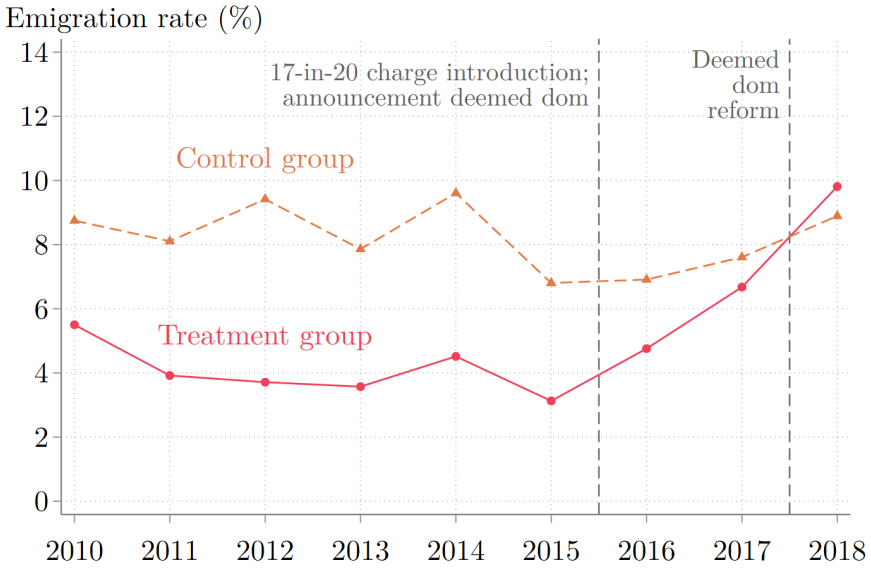
Second, the removal of the remittance basis for long-staying remittance basis users creates a clear increase in emigration in response. The emigration rate in this group begins to rise from announcement of the reform, so that it has more than doubled by the year after implementation. We find a similar emigration elasticity using those who have been in the UK for 15–16 of the last 20 years as the treatment group, suggesting that the observed emigration is mainly driven by the deemed dom reform rather than the 2015 introduction of the £90,000 charge for those who had spent at least 17 of the previous 20 years in the UK (Table 1). Given that 10% of the affected remittance basis users emigrate in 2018, 90% of them remain resident in the UK and start to pay tax on their worldwide income (Figure A5). We estimate the effect of the reform on their UK incomes, tax paid, and investments in Section 5.

Third, the emigration rate in the control group is relatively stable over the whole period. There is a slight increase after 2016 which could be a consequence of Brexit but may equally likely just be a reversion to the longer-term mean. The stability of the emigration rate in the control group alleviates concerns that they might respond in anticipation to becoming deemed domiciled in future years. There are two additional arguments why this is unlikely: First, we do not expect many taxpayers to voluntarily and prematurely give up a tax status which is very generous to them (also compared to tax treatment in other countries). Second, we find very similar emigration elasticities using a range of control groups who will be deemed domiciled themselves between one and five years from now (Figure A6). The lack of a gradient across different control groups suggests that anticipation responses are limited.

Taking these points together, the reform appears to increase the emigration rate by roughly 6pp by the first year after implementation. This is an increase of around 150% over the baseline pre-announcement emigration rate. We will properly estimate the emigration response as the reduced form of our instrumental variable difference-in-differences approach in Section 4.4.

We currently have access to administrative tax data up to and including 2018, so we can only estimate the treatment effect up to the first year after the reform. Whether the

**Figure 6: Emigration response to the 2017 deemed domicile reform**




**Notes:** Evolution of the emigration rate in the treatment and control group over time. Treatment group includes remittance basis users who have been UK resident for 17–20 of the previous 20 years and thus lost access to the remittance basis as a consequence of Condition B of the deemed domicile reform. Control group includes remittance basis users who have been UK resident for 10–14 years over the same period and therefore were not affected.
**Source:** Authors' calculations based on HMRC administrative datasets.

long-run effect looks different from the short-run impact is theoretically ambiguous. On the one hand, moving abroad requires a lot of preparation time which could lead to a lagged response, consistent with the evolving impact over the years since announcement. On the other hand, there is a large fixed cost attached to reporting one's worldwide income in the UK and becoming fully compliant with being taxed as a UK domiciliary, so people looking to leave the country might prefer to do so immediately if at all. We plan to provide evidence on the response in subsequent years as soon as more recent data become available.

Given the large underlying tax change, we next convert this response into an emigration elasticity, before turning to the question of what types of remittance basis users responded to the reform.

## 4.4 Migration elasticity estimates

Taking an instrumental variable approach, we estimate the emigration (semi-)elasticity of the super-rich. This captures the percentage-point change in the emigration rate in response to a 1% increase in the net-of-average-tax rate. Table 1 reports our headline estimate of the migration elasticity, as well as the first stage and reduced form.

**Table 1: Emigration elasticity**

| | First stage: net-of-average-tax rate (1) | Reduced form: emigration rate (2) | 2SLS: semi-elasticity (3) |
|---|---|---|---|
| **Panel A: treatment group UK-resident for 17–20 of last 20 years** | | | |
| Treated × post-2018 | –0.178*** | 0.046** | |
| | (0.020) | (0.016) | |
| Semi-elasticity | | | –0.257*** |
| | | | (0.069) |
| Group-year cells | 18 | 18 | 18 |
| Individual-year obs. | 37,308 | 37,308 | 37,308 |
| **Panel B: treatment group UK-resident for 15–16 of last 20 years** | | | |
| Treated × post-2018 | –0.179*** | 0.051** | |
| | (0.012) | (0.015) | |
| Semi-elasticity | | | –0.285*** |
| | | | (0.076) |
| Group-year cells | 18 | 18 | 18 |
| Individual-year obs. | 21,584 | 21,584 | 21,584 |
| Group fixed effects | ✓ | ✓ | ✓ |
| Year fixed effects | ✓ | ✓ | ✓ |

**Notes:** Aggregate-level IV estimates of the (semi-)elasticity of the emigration rate with respect to the net-of-average-tax rate, exploiting the 2017 deemed domicile reform. First-stage estimate captures the effect of the reform on the net-of-average-tax rate. Reduced-form estimate shows the effect on the emigration rate. 2SLS estimate of the migration elasticity $\eta$ is the percentage-point change in the emigration rate in response to a 1% increase in the net-of-average-tax rate, obtained from estimating Equation (1). All specifications include group and year fixed effects. In the top panel, the treatment group consists of remittance basis users who have been UK-resident for 17–20 of the last 20 years. In the bottom panel, the treatment group includes remittance basis users who have been UK-resident for 15–16 of the previous 20 years. The control group in both panels includes remittance basis users who have been UK-resident for 10–14 years over the same period. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
**Source:** Authors' calculations based on HMRC administrative datasets.

From the first-stage estimate, we see that individuals losing access to the remittance basis due to the Condition B reform experienced a large drop in the net-of-average-tax rate, of 17.8% on average. Figure A4 shows the variation in the tax rate over time. This is a larger impact on the tax burden than typically seen in the literature, providing a compelling context in which to study migration responses.

Combined with a reduced-form estimate of 4.6pp, from comparing emigration in the years before reform implementation in 2017 to emigration after this date, our main emigration elasticity is –0.26. Based on our main specification, we can rule out elasticities lower than –0.4. We find a very similar emigration elasticity for treated individuals who have been UK-resident for 15–16 years over the previous two decades and using a range of control groups (Figure A6).

This response is not insubstantial but lower than typical estimates in the literature (Kleven et al., 2020; Agrawal et al., 2022; Moretti and Wilson, 2023). Our results contrast with Baselgia and Martínez (2023) who estimate a 30% long-run decline in the stock of super-rich foreigners in response to the abolition of expenditure-based taxation in Switzerland. This appears to be larger than the migration effect we find although they do not provide an elasticity estimate because they do not have access to individual-level tax data. The response may be stronger in their setting for several reasons: First, the special tax status was abolished only in some Swiss cantons, implying that intranational mobility, which is less costly than moving across countries, is a possible response. Second, people making use of expenditure-based taxation are not allowed to earn any labour income in Switzerland, while we find that remittance basis users have sizeable UK earnings and are therefore more strongly connected to the local economy. Third, the policy change we study increased the average tax rate faced by individuals who had already been living in the UK. Our approach therefore estimates the emigration response to the reform, but does not capture any effect on immigration behaviour.

## 4.5 Who responds?

Having seen that at least some remittance basis users leave the UK due to the reform, we next examine who it is that responds. In line with a classic Roy model, we expect responses to be larger for those who have better outside options or lower fixed costs of leaving. To test these hypotheses, we repeat our estimation of the migration elasticity using the Condition B deemed dom reform, but we estimate separate elasticities for different subgroups. Specifically, we split the sample by certain characteristics capturing various aspects of heterogeneity before collapsing into treatment and control group. We show three key findings consistent with theoretical predictions (Figure A7).[12]

First, those with higher UK incomes are less responsive to the reform. Dividing remittance basis users into those in the bottom 99%, 99-99.9th percentile, or top 0.1%, the estimated elasticity is smaller in magnitude for those with higher UK incomes.

As described in Sections 3.2 and 3.3, these UK incomes come largely from work, and often from industries where pay is higher than in alternative locations to which individuals could migrate. Hence even with a reduction in net-of-tax income, the higher UK lifetime earnings trajectory may be large enough to make emigration not worthwhile.

This can be seen directly through looking at heterogeneity in the estimated elasticity by main source of income. The point estimate of the elasticity is clearly much smaller in magnitude for those working in the UK including employees, owner-managers, partners, and the self-employed (–0.20) than for investors (–0.32). The emigration response is

[12]Whilst in many cases the confidence intervals overlap, we consider the patterns of point estimates to still be informative.

particularly weak among people working in finance and other professional services such as consulting and law (–0.09).

This can also be seen by looking at existing UK income tax paid. Looking across tercile groups of tax paid, those currently paying the least tax are the most responsive. Since tax paid increases with UK-source income, these are the individuals who are least 'economically attached' to the UK, reducing the cost of leaving. This also means the reduction in revenue from people leaving after the reform is smaller than the overall elasticity estimate implies.

Second, by contrast to the previous finding, the additional tax owed as a result of losing access to the remittance basis following the reform seems to have little effect on the elasticity. The estimated elasticity does not vary across terciles of unremitted income, which is the direct determinant of amount of additional tax owed. Clearly those who owe more additional tax are more likely to leave, but there is no observable non-linearity, whereby those who will pay more are even more responsive.

Third, responses are stronger for older individuals. In particular, there is close to no effect for those under the age of 45, but elasticities of –0.31 (–0.38) for those aged 45–59 (60+) respectively. Two features are likely to explain this. First, the younger group is more likely to have school-aged children, and therefore have higher costs of moving.[13] Second, having already highlighted the importance of labour income, older individuals are closer to retirement and therefore a smaller share of their lifetime resources will come from future earnings. The total cost of any reduction in ongoing earnings is therefore lower.

# 5 Effects on incomes, revenue, and investment

In the previous section, we document modest emigration of the super-rich in response to a large tax hike from losing access to the remittance basis. A key concern is whether the effect turned out to be limited because the targeted long-staying remittance basis users were able to circumvent the tax increase, for example by retaining their offshore investment income in a non-UK resident trust. Because being taxed on the remittance basis affects how much income must be reported and how much income tax must be paid in the UK, we now study how these outcomes respond to the reform at the individual level. We also shed light on the effect on tax revenue and investment activity.

## 5.1 Identification and estimation

Similar to our emigration analysis, we evaluate the causal effect of the removal of the remittance basis on reported income, tax paid, and investment using a difference-in-

[13]UK tax data do not allow us to directly observe which individuals actually have children.

differences approach. Again we compare remittance basis users who were affected by the reform to other remittance basis users who have been living in the UK for a considerable number of years but not long enough to be affected. Accordingly, identification relies on the parallel trends assumption. In contrast to the aggregate-level emigration analysis, we now track individual-level responses over time.

We focus on people who were claiming the remittance basis in 2017, the year immediately preceding implementation of the deemed dom reform, because these are most likely to be affected. In line with the emigration analysis, the treatment group consists of remittance basis users who have been UK-resident for at least 15 of the last 20 years, including 2017, or explicitly report being deemed domiciled in the 2018 tax return. The control group includes remittance basis users who have been living in the UK for 10–14 years over the same period. To make the treatment and control group more comparable and to avoid that control individuals newly become subject to paying a remittance basis charge at the time of the reform (which would result in a simultaneous increase in their tax burden), we only include individuals paying a remittance basis charge in 2017. To rule out compositional changes from panel attrition, we restrict the sample to individuals who are present in the data in every year considered. We limit the estimation window to 2014–2018 because enforcing a balanced panel over a longer period would reduce power. Again we remove individuals affected by Condition A.

We estimate pre-trends and treatment effects using the following dynamic difference-in-differences specification:

$$Y_{it} = \sum_{\substack{k=2014 \\ k \neq 2017}}^{2018} \delta_k \times \mathbb{1}\{t = k\} \times T_i + \alpha_i + \gamma_t + \epsilon_{it}, \tag{2}$$

where $Y_{it}$ is an outcome of interest for individual $i$ in year $t$, $\alpha_i$ denotes individual fixed effects, and $\gamma_t$ denotes year fixed effects. $T_i$ is the treatment group indicator defined above. Coefficients $\delta_k$ for $k < 2017$ capture pre-trends, whereas $\delta_{2018}$ represents the average treatment effect. The coefficient of the pre-reform year, 2017, is normalised to zero. By including individual fixed effects, we control for any time-invariant individual characteristics that could confound our effect estimate. Moreover, by focusing on remittance basis users close to the 15-year threshold set by the reform, treatment and control group are likely to have similar characteristics in general. Year fixed effects absorb any common year-specific shocks. Standard errors are clustered at the individual level.

## 5.2 Effect on income reported and tax paid in the UK

After the deemed dom reform, there is a substantial increase in average income reported by those losing access to the remittance basis, while there is no change for those unaf-

fected. On average, total income reported in the UK rises by 165% (Figure 7b). This translates almost directly into the impact on income tax paid in the UK which goes up by 152% on average (Figure 8b). These findings dispel fears that the modest emigration response might be caused by a lack of effectiveness of the reform. The massive average relative increases are somewhat skewed by large increases from a relatively low base. Descriptively, mean UK-reported income in the treatment group increases from roughly £1m before the reform to £1.5m in 2018 (Figure 7a); mean UK income tax among the treated rises from about £350,000 to over £500,000 (Figure 8a). The corresponding difference-in-differences estimates for the average increase in levels are £400,000 for income (Figure A9) and £124,000 for income tax (Figure A12).

Figure 9a shows that these impacts on income and tax are driven by a large increase in the share of people reporting non-zero investment income (6pp, on a base of 86%) and a smaller increase for earned income (3pp, on a base of 76%). Looking at the intensive margin, we observe a spike in investment income reported in the UK. This is expected given the reform required affected taxpayers to start reporting their overseas investment income to the UK tax authority. There is also a moderate relative increase in earned income of 18% which translates into a sizeable absolute increase given the pre-reform mean in the treatment group of roughly £700,000 (Figures A10 and A14). This is consistent with the remittance basis also applying to foreign earnings until people become deemed domiciled, but only if the job is with a foreign employer and entirely separate from any work performed for a UK employer.

## 5.3 Effect on UK investment

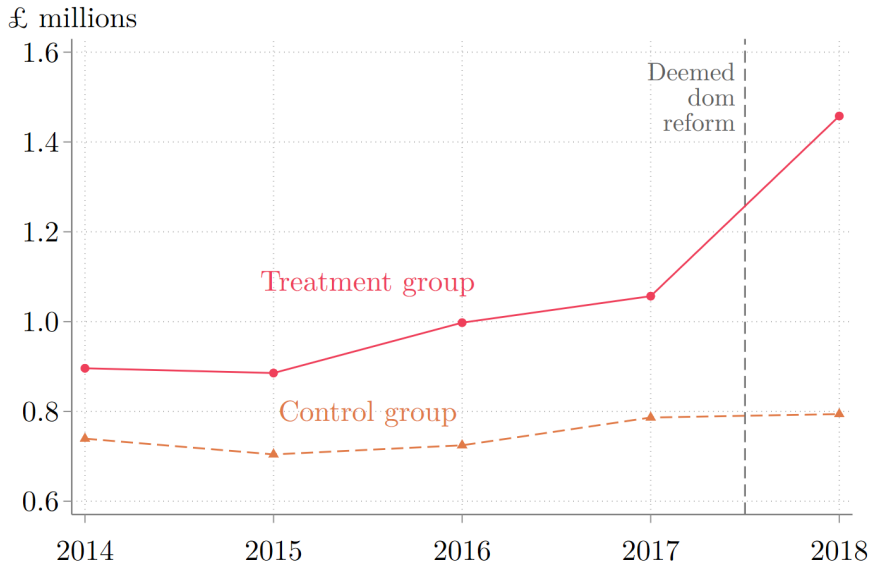
We have shown that the amount of investment income reported to the UK tax authority increases substantially in response to the deemed dom reform. Since the remittance basis provides incentives to wealthy taxpayers to keep their investments overseas where they remain largely untaxed, the question now is whether this represents a mere increase in reporting of offshore investment income or an increase in investment income arising in the UK. While UK income tax surges in both cases, the UK economy only benefits from additional investment if money previously held abroad is brought onshore.

To assess the impact on UK investment, we estimate separate effects on foreign-source and UK-source investment income. We find that the share who report receiving foreign-source investment income rises by more than 40pp – a doubling over the base of 37% (Figure 10a). We also see a large increase in the amount of offshore investment reported in the UK (Figure 10b). The effect on the share who report non-zero UK-source investment income is a precisely estimated zero. Nevertheless, at the intensive margin UK-source investment income increases by more than 50%. This implies that individuals who had already invested domestically before the reform do move some of their overseas

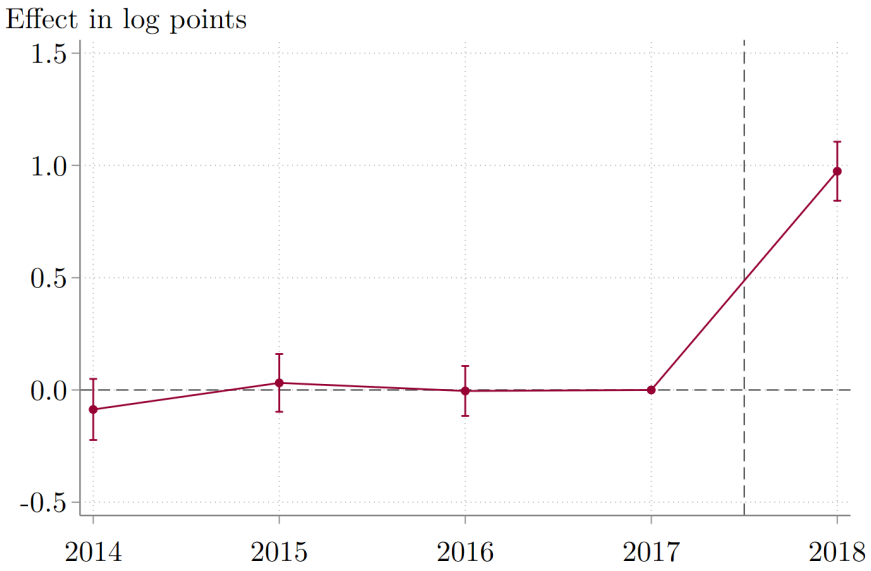
investments into the UK after removal of the tax incentives for investing offshore. But the reform has so far not led individuals who did not already have UK investments to move money into the country. We will track how the effect on UK investment evolves over time as additional years of data become available.

**Figure 7: Effect on total income reported in the UK**

(a) Mean UK-reported income



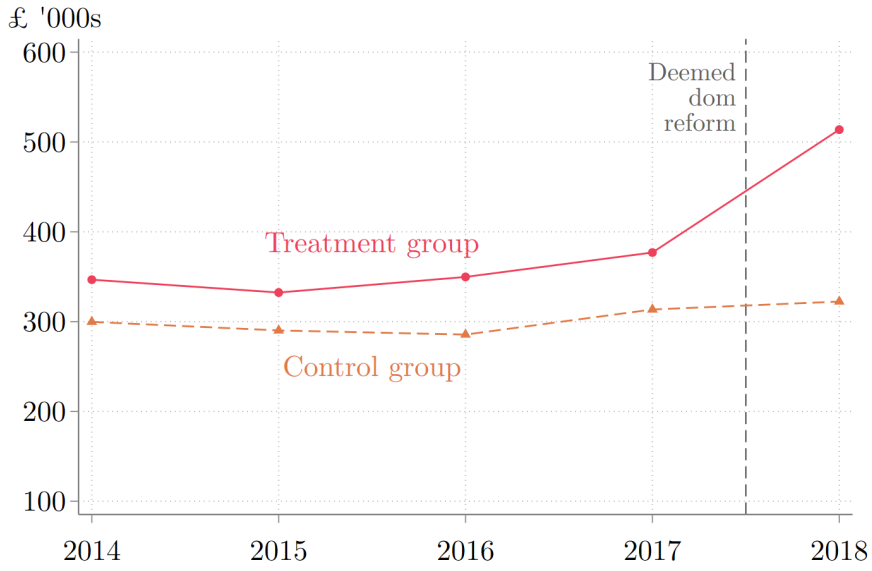

(b) Difference-in-differences estimates



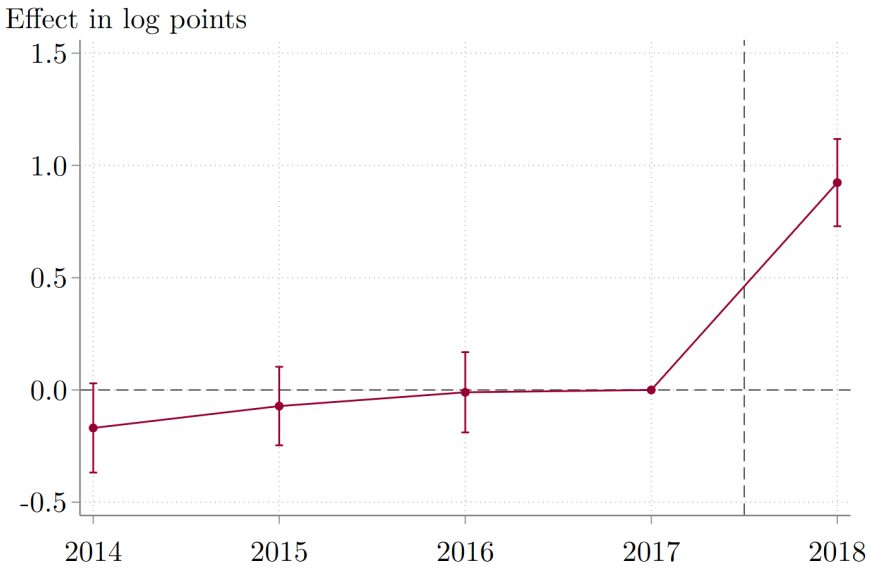

**Notes:** Panel (a) shows the evolution of mean UK-reported total income in the treatment and control group over time. Panel (b) shows individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on total income reported in the UK, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure 8: Effect on income tax paid in the UK**

(a) Mean UK income tax



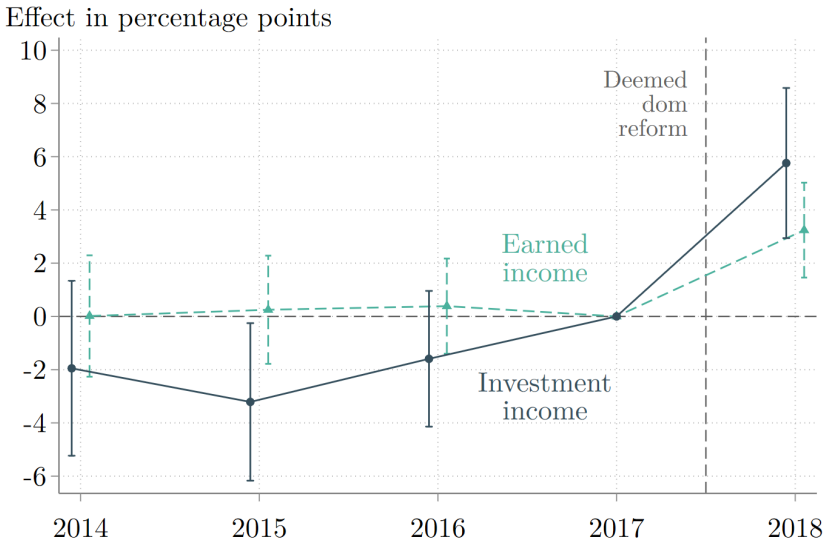

(b) Difference-in-differences estimates



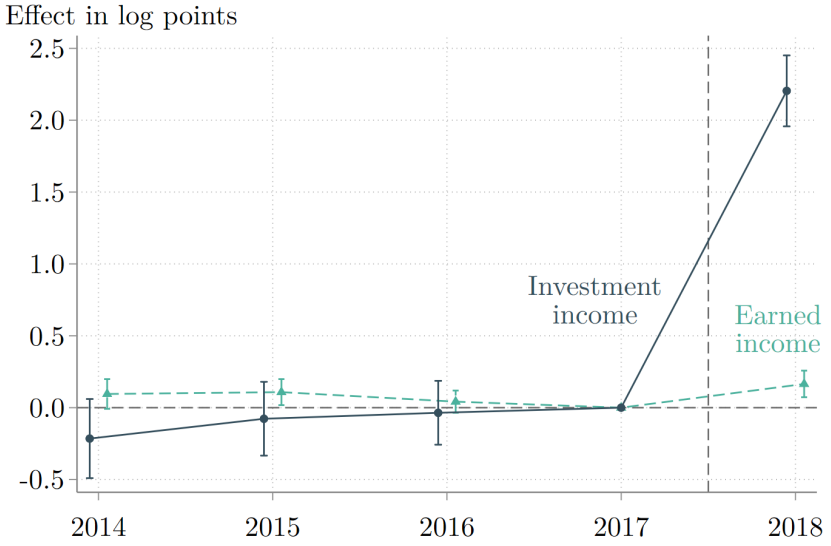

**Notes:** Panel (a) shows the evolution of mean UK income tax paid in the treatment and control group over time. Panel (b) shows individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on UK income tax paid, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure 9: Effect on investment income and earned income reported in the UK**

(a) Extensive margin



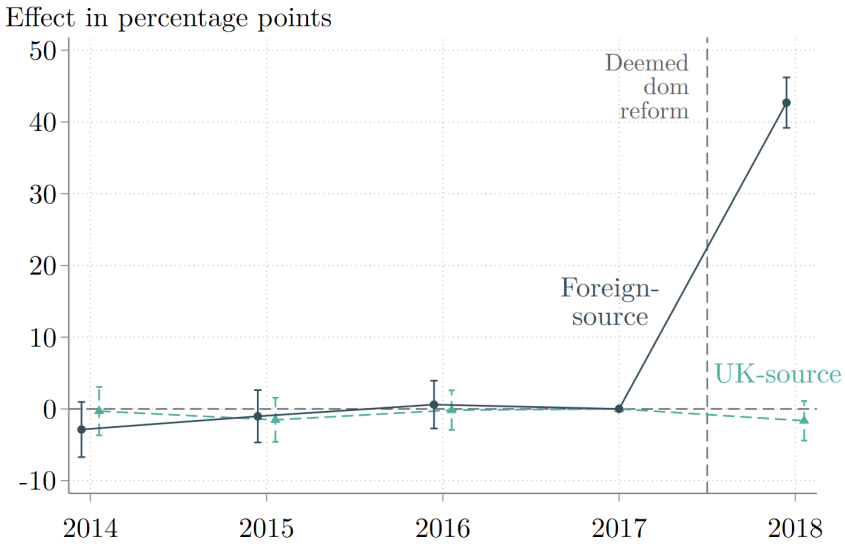

(b) Intensive margin



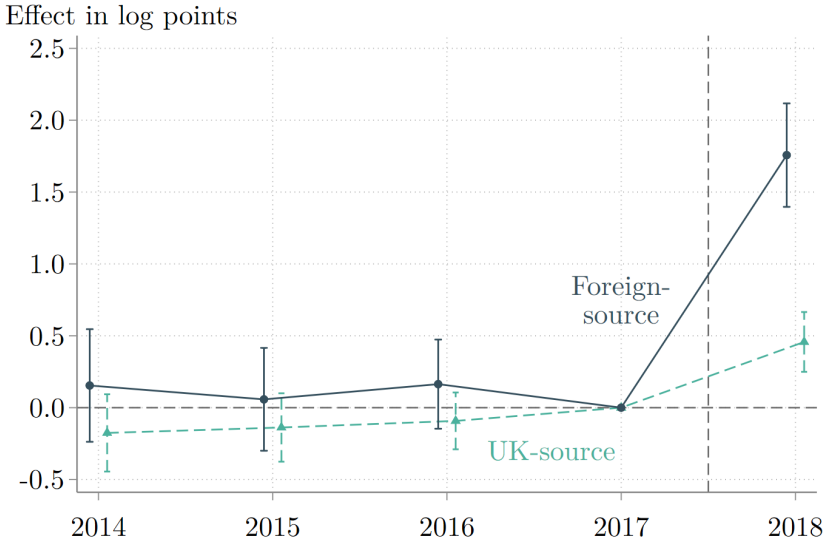

**Notes:** Panel (a) shows the estimated effect on the probability of reporting investment income or earned income in the UK, respectively. Panel (b) shows the estimated effect on the log of investment income or earned income reported in the UK, respectively, conditional on reporting non-zero investment/earned income. Both panels depict individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis, exploiting Condition B of the deemed domicile reform. The graphs display year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals. The evolution of mean investment income and mean earned income by group is shown in Figure A13 and A14, respectively.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure 10: Effect on foreign-source and UK-source investment income**

(a) Extensive margin




(b) Intensive margin




**Notes:** Panel (a) shows the estimated effect on the probability of reporting foreign-source or UK-source investment income, respectively. Panel (b) shows the estimated effect on the log of foreign-source or UK-source investment income reported in the UK, respectively, conditional on reporting non-zero foreign-source/UK-source investment income. Both panels depict individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis, exploiting Condition B of the deemed domicile reform. The graphs display year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals. The evolution of mean foreign-source investment income and mean UK-source investment income by group is shown in Figure A15 and A16, respectively.
**Source:** Authors' calculations based on HMRC administrative datasets.

# 6 Conclusion

This paper examines a key open question in the taxation of capital: how responsive is the migration behaviour of the super-rich to capital taxes? By exploiting a UK reform that caused large increases in the average tax rate for a subset of the internationally connected super-rich, our analysis has both a powerful first stage and compelling identification, leveraging essentially exogenous differences across individuals within the UK. Combining these, we find that emigration elasticities for the super-rich are modest, both in absolute terms and compared with existing estimates in the literature.

Narrowly, our findings suggest that abolition of the remittance basis – the primary tax break for non-doms in the UK – would raise substantial revenue from the group of super-rich individuals who currently benefit, raising around £3bn from around 26,000 people. This is similar to the amount raised by increasing the headline income tax rate by almost 0.3pp on the entire UK taxpaying population (around 40m people).

Our findings have implications for the taxation of wealth more generally. A growing literature has examined the effect of taxing wealth on outcomes within a nation, including studying the effects on internal migration. But moving internationally is much more costly, and in the absence of evidence on the extent to which such migration takes place, high-profile anecdotes have often taken primacy in the policy debate. Our results imply that, while the baseline rate of migration among the globally connected super-rich is high enough to sustain the anecdotes, among long-stayers the actual mobility in response to taxation is lower than is traditionally believed. Importantly, those who do leave are much more likely to be those who were contributing little fiscally even before reform, and hence have the weakest economic ties to the country.

Three key uncertainties remain regarding taxation and mobility of the super-rich. First, do people who have been living in the country for fewer years than the long-stayers we focus on respond more strongly to a tax hike? Second, while the emigration effects we find are relatively modest, to what extent do higher taxes reduce *immigration*? Baseline immigration rates for the super-rich are high, so responses on this margin may be economically consequential. Third, beyond the fiscal implications, are there any wider economic impacts from the emigration we do observe? Although those who leave are less likely to be working or investing substantially in the UK, since they are geographically concentrated there may still be important local economic impacts.

# Bibliography


Advani, A., D. Burgherr, M. Savage, and A. Summers (2022a): "The UK's Global Economic Elite: A Sociological Analysis Using Tax Data," Working Paper No. 570, Competitive Advantage in the Global Economy (CAGE).

Advani, A., F. Koenig, L. Pessina, and A. Summers (2020): "Importing Inequality: Immigration and the Top 1 Percent," Working Paper No. 508, Competitive Advantage in the Global Economy (CAGE).

Advani, A. and A. Summers (2020): "How Much Tax Do the Rich Really Pay?" Policy Brief No. 27, Competitive Advantage in the Global Economy (CAGE).

Advani, A., A. Summers, and H. Tarrant (2022b): "Measuring Top Wealth Shares in the UK," Working Paper No. 610, Competitive Advantage in the Global Economy (CAGE).

Agrawal, D. R., D. Foremny, and C. Martínez-Toledano (2022): "Wealth Tax Mobility and Tax Coordination," Working Paper.

Apps, P. F. and R. Rees (1999): "Individual Versus Joint Taxation in Models With Household Production," *Journal of Political Economy*, 107, 393–403.

Avery Jones, J. F. (2004): "Taxing Foreign Income from Pitt to the Tax Law Rewrite – The Decline of the Remittance Basis," *Studies in the History of Tax Law*.

Bakija, J. M. and J. Slemrod (2004): "Do the Rich Flee from High State Taxes? Evidence from Federal Estate Tax Returns," NBER Working Paper No. 10645.

Baselgia, E. and I. Martínez (2023): "Behavioral Responses to Special Tax Regimes for the Super-Rich: Insights from Swiss Rich Lists," EU Tax Observatory Working Paper No. 12.

Boskin, M. J. and E. Sheshinski (1983): "Optimal Tax Treatment of the Family: Married Couples," *Journal of Public Economics*, 20, 281–297.

Brülhart, M., J. Gruber, M. Krapf, and K. Schmidheiny (2022): "Behavioral Responses to Wealth Taxes: Evidence from Switzerland," *American Economic Journal: Economic Policy*, 14, 111–50.

Brülhart, M. and R. Parchet (2014): "Alleged Tax Competition: The Mysterious Death of Bequest Taxes in Switzerland," *Journal of Public Economics*, 111, 63–78.

Conway, K. S. and J. C. Rork (2006): "State 'Death' Taxes and Elderly Migration—The Chicken or the Egg?" *National Tax Journal*, 59, 97–128.

Jakobsen, K., K. Jakobsen, H. Kleven, and G. Zucman (2020): "Wealth Taxation and Wealth Accumulation: Theory and Evidence From Denmark," *The Quarterly Journal of Economics*, 135, 329–388.

Kleven, H., C. Landais, M. Muñoz, and S. Stantcheva (2020): "Taxation and Migration: Evidence and Policy Implications," *Journal of Economic Perspectives*, 34, 119–42.

Kleven, H. J., C. Landais, E. Saez, and E. Schultz (2014): "Migration and Wage Effects of Taxing Top Earners: Evidence from the Foreigners' Tax Scheme in Denmark," *The Quarterly Journal of Economics*, 129, 333–378.

Moretti, E. and D. J. Wilson (2023): "Taxing Billionaires: Estate Taxes and the Geographical Location of the Ultra-Wealthy," *American Economic Journal: Economic Policy*, 15, 424–66.

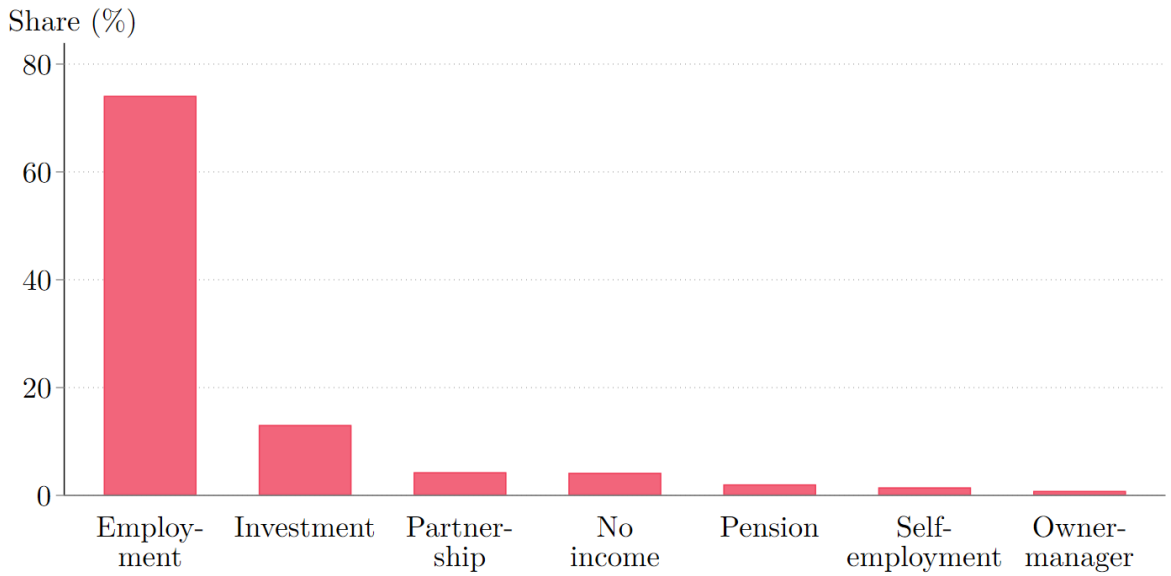
Piggott, J. and J. Whalley (1996): "The Tax Unit and Household Production," *Journal of Political Economy*, 104, 398–418.

Wooldridge, J. M. (2007): "Inverse Probability Weighted Estimation for General Missing Data Problems," *Journal of Econometrics*, 141, 1281–1301.

# Appendices

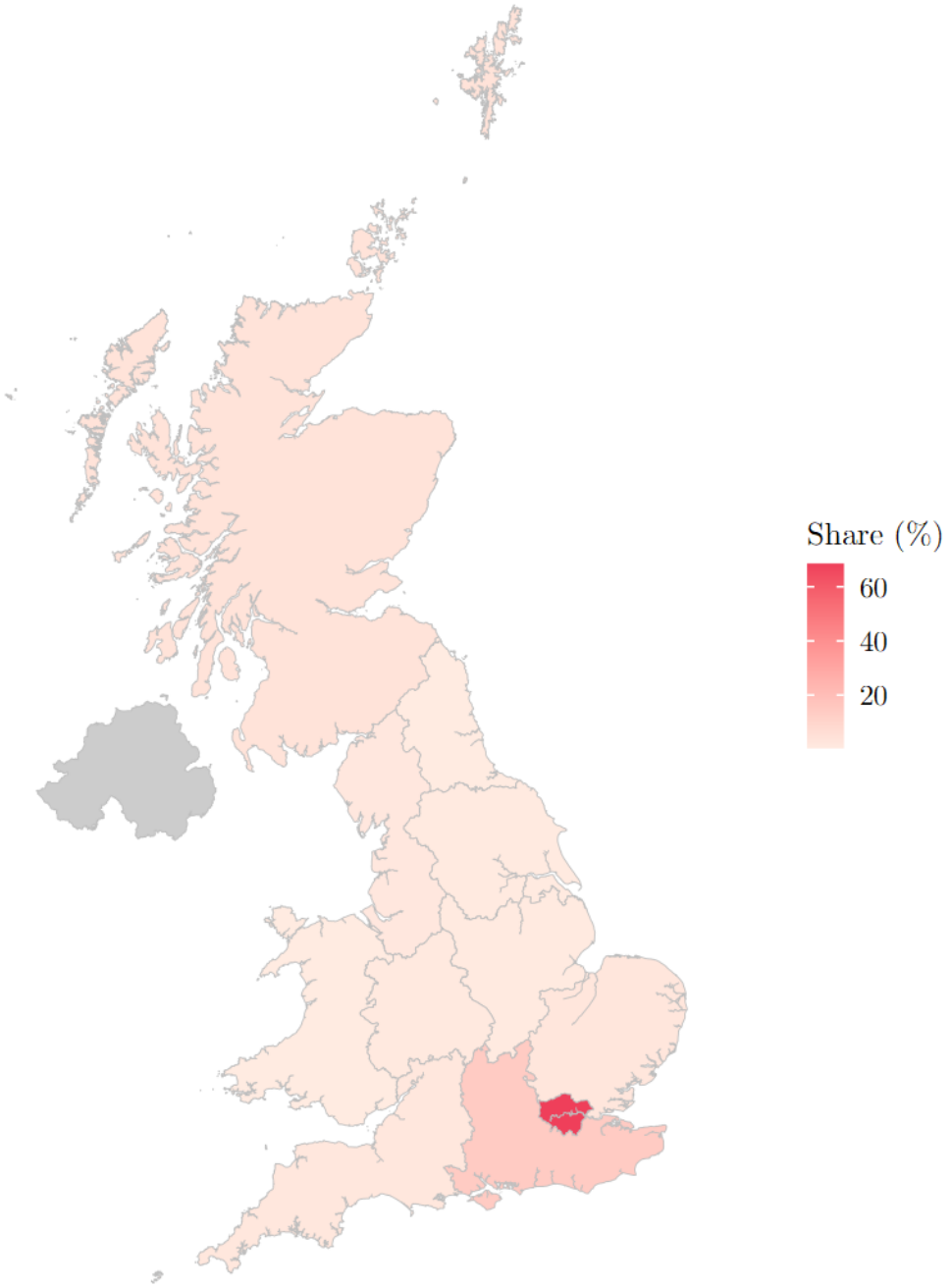
## Appendix A Additional Tables and Figures

**Figure A1: Main source of income of remittance basis users excluding unremitted income**



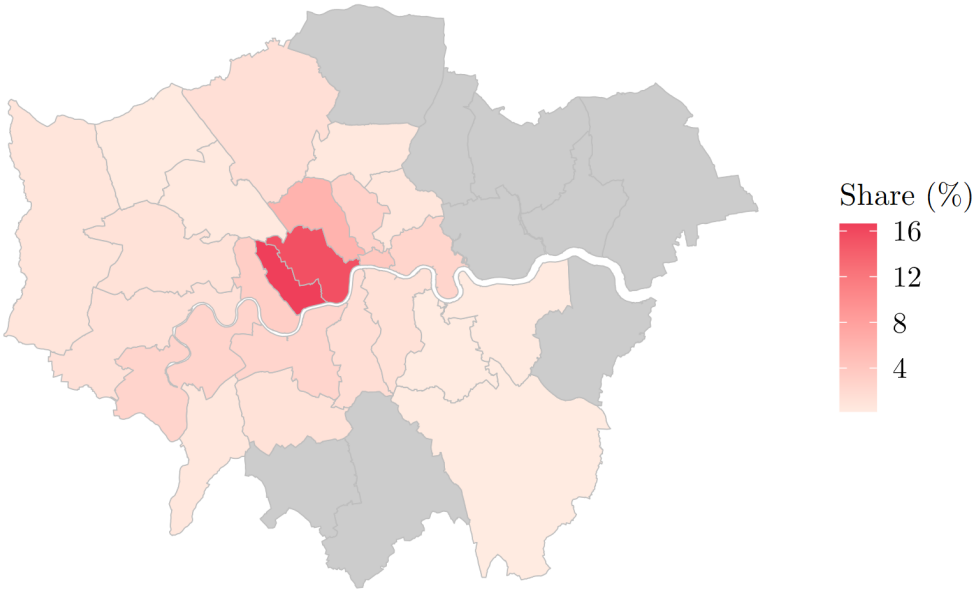

**Notes:** Share of remittance basis users by main source of income excluding unremitted offshore investment income in 2015. Main source of income is identified from largest income source across employment, self-employment, partnership, pension, and investment income. 'Owner-managers' are individuals whose largest income source is dividends and are also directors of closely held companies, which are defined in UK tax law as firms with five or fewer directors and/or shareholders. Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A2: Residential location of remittance basis users**



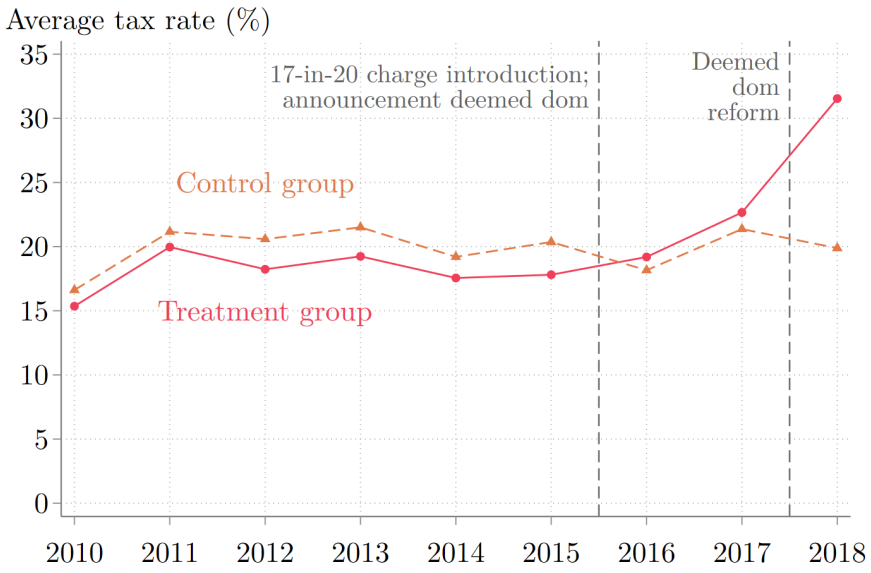

**Notes:** Share of remittance basis users by residential location in 2015. Areas in the figure represent GOR/NUTS1 regions. Location is determined from the personal address reported on the tax return. Areas with fewer than 50 remittance basis users have been shaded grey to prevent identification of disclosive information. Location is suppressed or not observed in the data for around 600 remittance basis users, representing 2% of the total. Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A3: Residential location of remittance basis users in London**



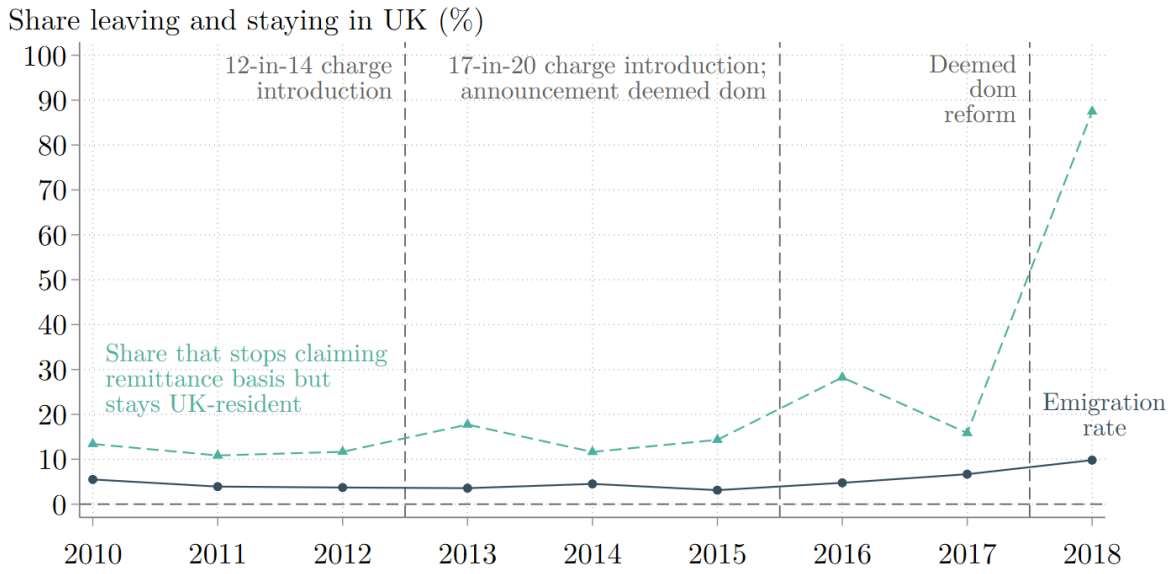

**Notes:** Share of remittance basis users by residential location within Greater London in 2015. Areas in the figure represent London Boroughs. Location is determined from the personal address reported on the tax return. Areas with fewer than 50 remittance basis users have been shaded grey to prevent identification of disclosive information. Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A4: First stage of migration elasticity estimation: average tax rate**



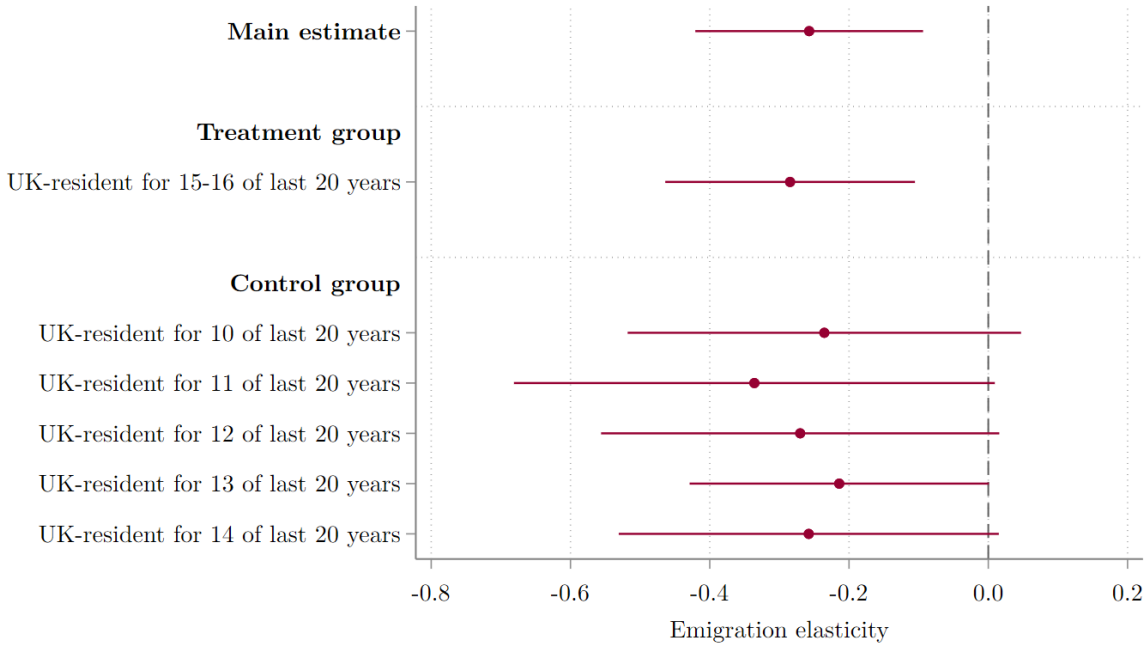

**Notes:** Evolution of the average tax rate in the treatment and control group over time as used in the first stage of the migration elasticity estimation. Treatment group includes remittance basis users who have been UK resident for 17—20 of the previous 20 years. Control group includes remittance basis users who have been UK resident for 10–14 years over the same period.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A5: Share of remittance basis users who emigrate or stay in UK but stop claiming the remittance basis**



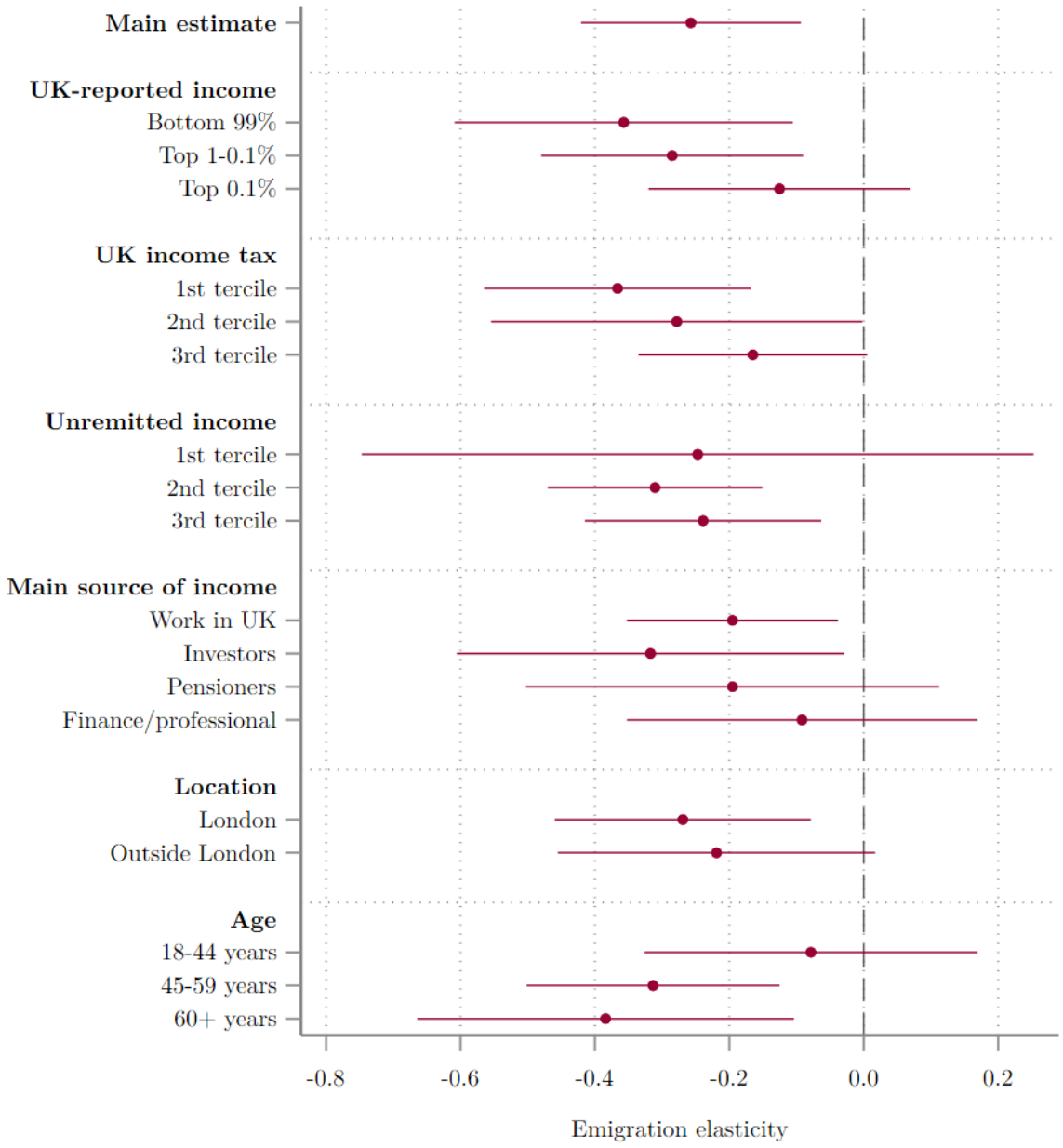

**Notes:** Evolution of the share of individuals who emigrate or stay UK-resident but stop claiming the remittance basis in the treatment group, i.e. among remittance basis users who have been UK resident for 17—20 of the previous 20 years. Emigration rate in a given year is calculated as the share of individuals who claimed the remittance basis in the previous year and is not UK-resident in the current year. The share of stayers who stop claiming the remittance basis is defined as the share of individuals who claimed the remittance basis in the previous year and still are UK-resident in the current year but do not claim the remittance basis anymore.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A6: Sensitivity of emigration elasticity to treatment and control group definitions**



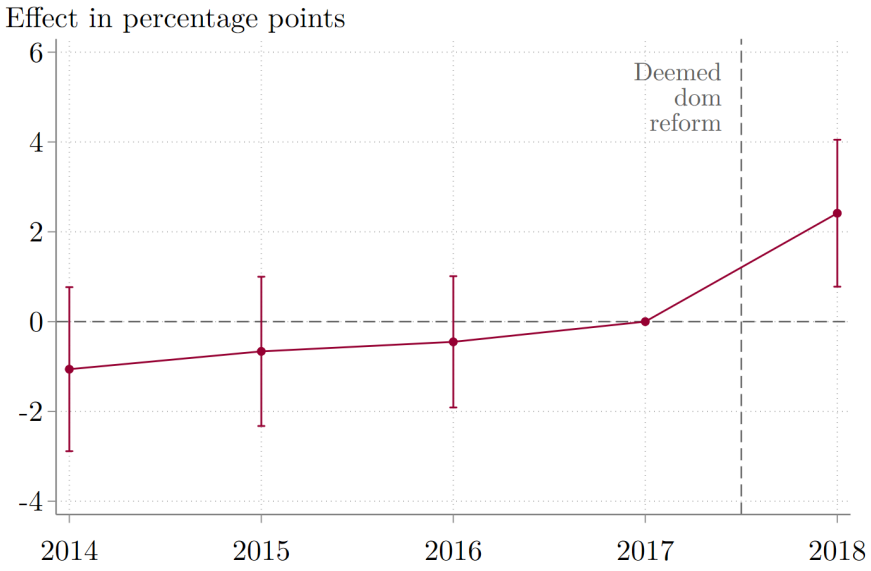

**Notes:** Sensitivity of the estimated emigration elasticity, obtained from estimating Equation (1), to changing the definition of the treatment and control group. Our main estimate uses remittance basis users who have been UK-resident for 17–20 of the last 20 years as the treatment group and remittance basis users who have been UK-resident for 10–14 of the last 20 years as the control group. The alternative estimates use different treatment or control groups as indicated in the figure. See Table 1 for more information on the estimation of the elasticity.
**Source:** Authors' calculations based on HMRC administrative datasets.

## Figure A7: Heterogeneity in emigration elasticity



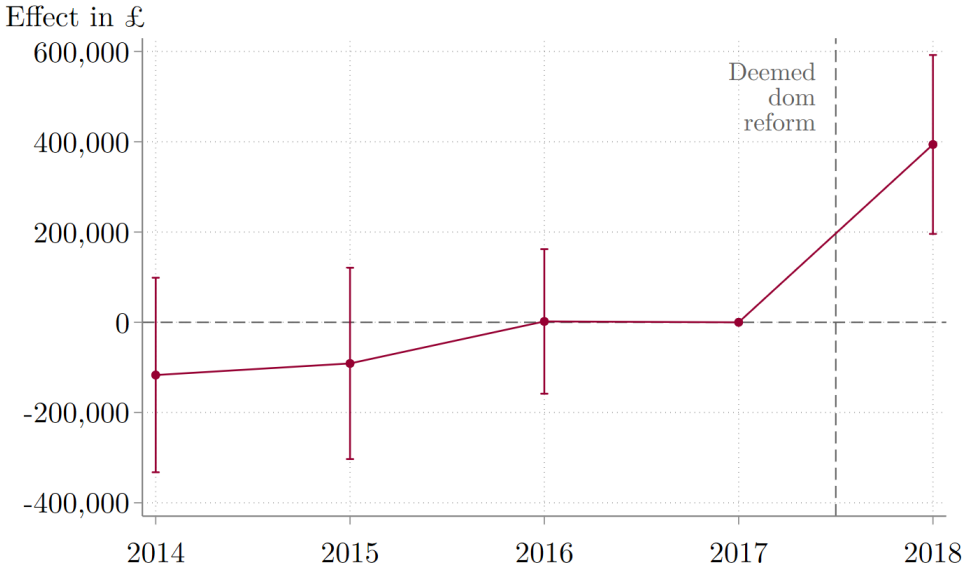

**Notes:** Heterogeneity in the estimated emigration elasticity, obtained from estimating Equation (1), by UK-reported income, UK income tax paid, unremitted offshore income, main source of income, residential location, and age. Tercile groups are defined with respect to the distribution in the treatment group. Subgroup 'Work in UK' includes employees, owner-managers, partners, and the self-employed. 'Finance/professional' includes people working in financial and insurance activities as well as professional, scientific and technical activities based on the Standard Industrial Classification (SIC) 2007 version. Residential location is determined from the personal address reported on the tax return. Elasticity estimates are obtained by restricting the sample to the corresponding subgroup and then following the IV approach explained in Section 4.2. See Table 1 for more information on the estimation of the elasticity.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A8: Extensive margin effect on UK-reported total income**



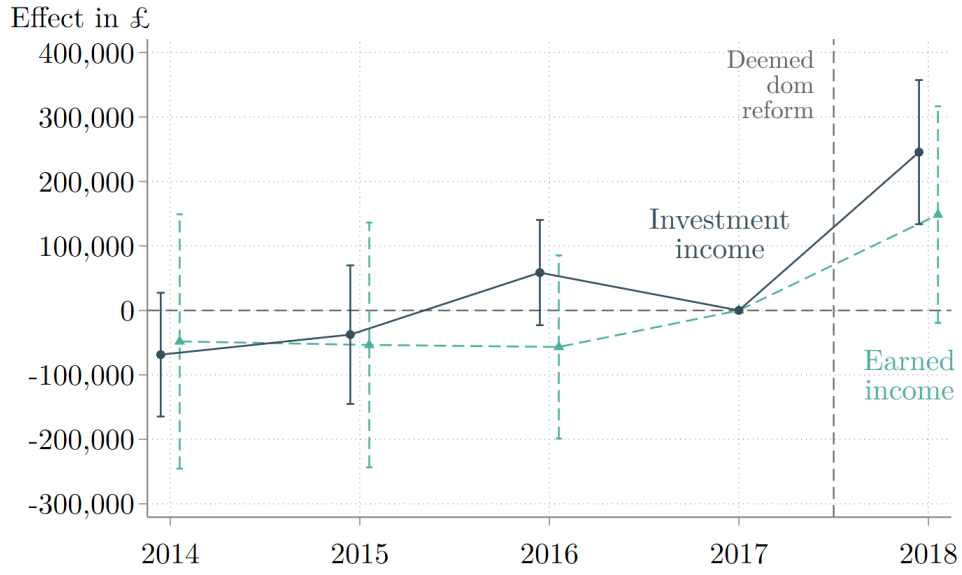

**Notes:** Individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on the probability of any income in the UK, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A9: Effect on level of UK-reported total income**



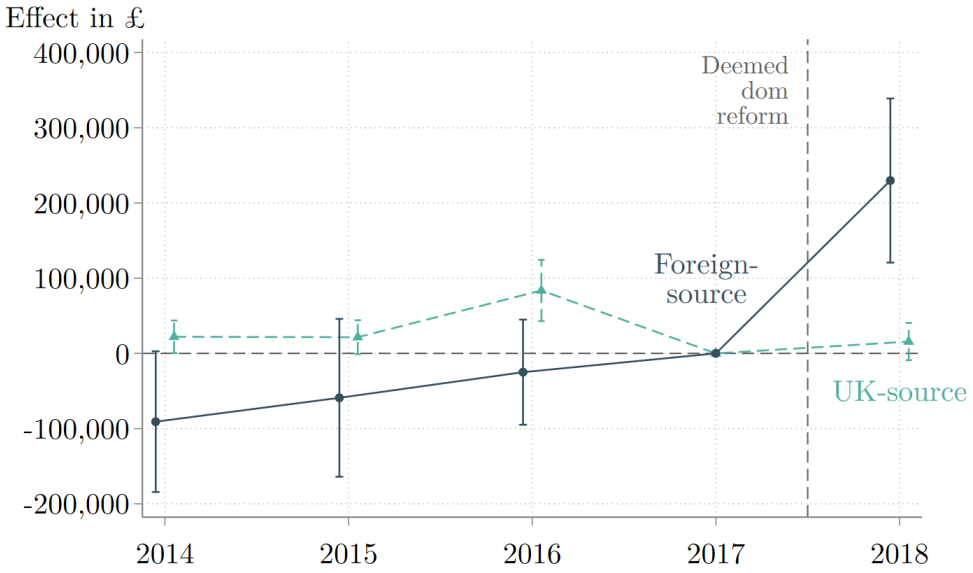

**Notes:** Individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on the level of total income reported in the UK, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A10: Effect on level of UK-reported investment income and earned income**



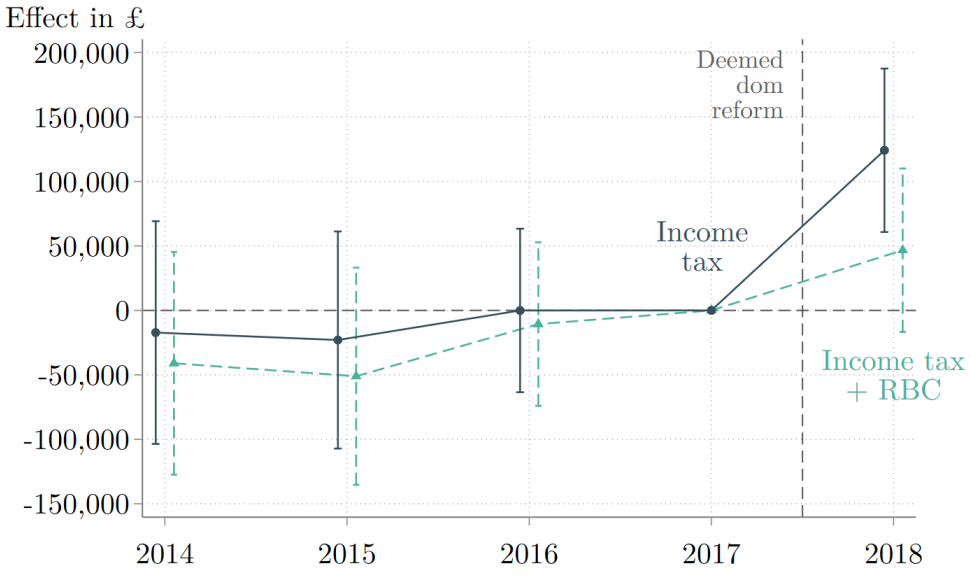

**Notes:** Individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on the level of UK-reported investment income and earned income, respectively, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A11: Effect on level of UK-source and foreign-source investment income**



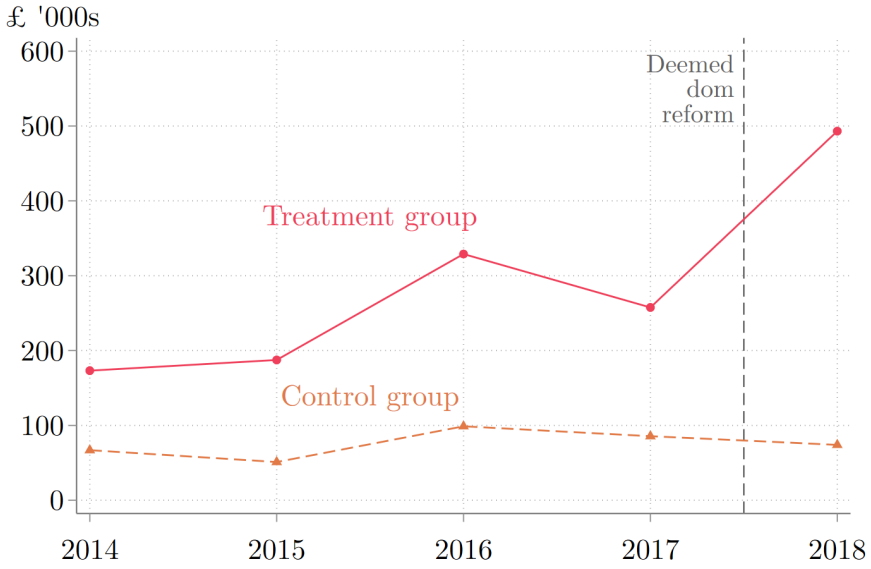

**Notes:** Individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on the level of foreign-source and UK-source investment income, respectively, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A12: Effect on level of UK income tax and remittance basis charge paid**



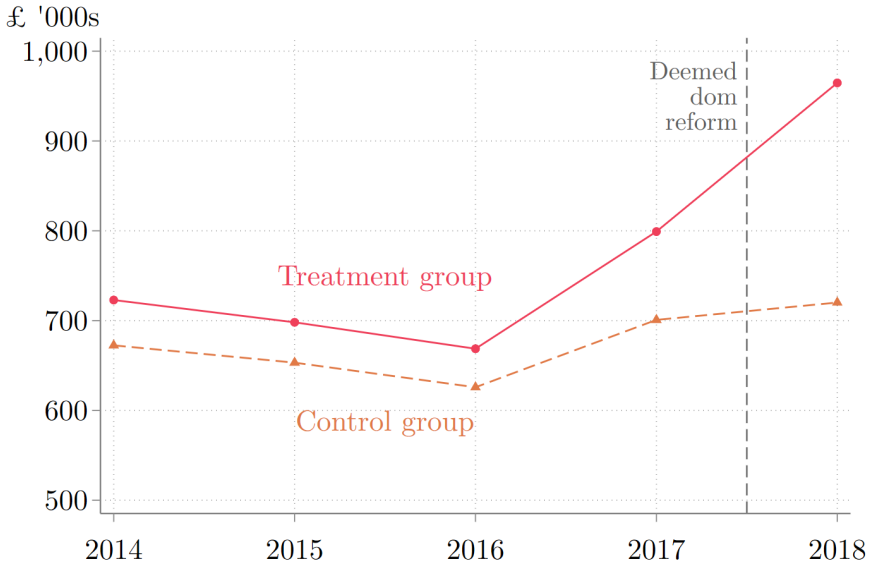

**Notes:** Individual-level dynamic difference-in-differences estimates of the effect of losing access to the remittance basis on the level of UK income tax paid and UK income tax plus remittance basis charge paid, respectively, exploiting Condition B of the deemed domicile reform. The graph displays year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (2). Standard errors are clustered at the individual level. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15—20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A13: Mean investment income**



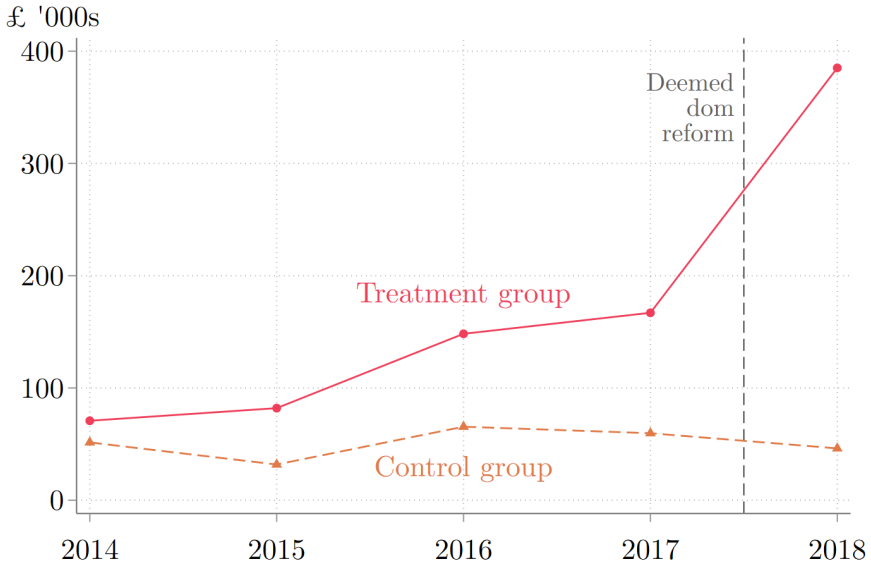

**Notes:** Evolution of mean UK-reported investment income in the treatment and control group over time. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15–20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

## Figure A14: Mean earned income



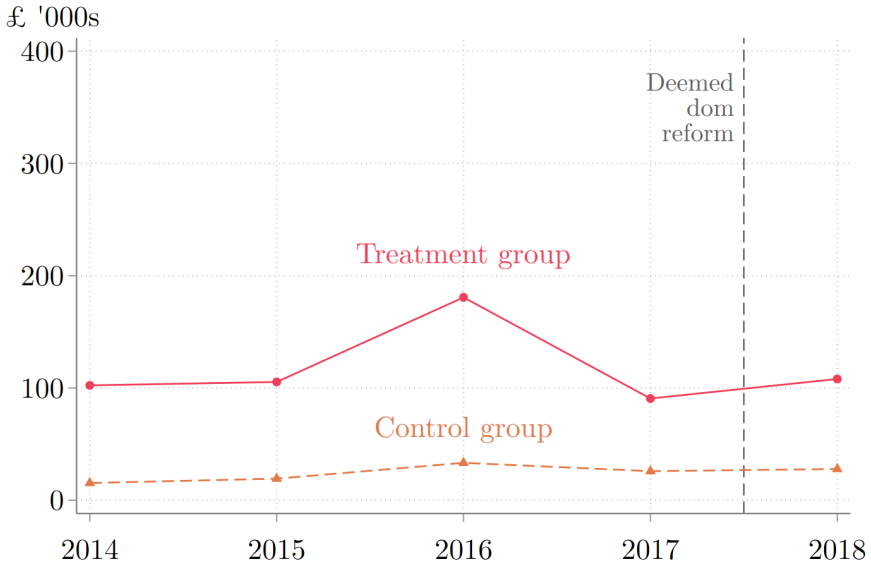

**Notes:** Evolution of mean UK-reported earned income in the treatment and control group over time. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15–20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A15: Mean foreign-source investment income**




**Notes:** Evolution of mean foreign-source investment income reported in the UK in the treatment and control group over time. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15–20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Figure A16: Mean UK-source investment income**




**Notes:** Evolution of mean UK-source investment income in the treatment and control group over time. Base sample includes individuals paying a charge to access the remittance basis in 2017 who were present in the data in all years 2014–2018. Treatment group includes individuals who have been UK-resident for 15–20 of the previous 20 years or explicitly report being deemed domiciled in the tax return in 2018. Control group includes those who have been UK-resident for 10–14 years over the same period. Estimation sample includes 17,075 individual-year observations from 2,459 treated and 956 control individuals.
**Source:** Authors' calculations based on HMRC administrative datasets.

**Table A1: Top 25 5-digit industries among remittance basis users**

| Rank | Industry (SIC code) | Number | Share (%) |
|---|---|---|---|
| 1 | Banks (K64191) | 3,006 | 13.86 |
| 2 | Activities auxiliary to financial intermediation (K66190) | 1,440 | 6.64 |
| 3 | Management consultancy (M70229) | 1,302 | 6.00 |
| 4 | Other business support services (N82990) | 1,066 | 4.91 |
| 5 | Mineral oil refining (C19201) | 802 | 3.70 |
| 6 | Fund management (K66300) | 762 | 3.51 |
| 7 | Head offices (M70100) | 757 | 3.49 |
| 8 | Extraction of crude petroleum (B06100) | 593 | 2.73 |
| 9 | Other professional, scientific & technical activities (M74909) | 358 | 1.65 |
| 10 | Advertising agencies (M73110) | 319 | 1.47 |
| 11 | Information technology consultancy (J62020) | 318 | 1.46 |
| 12 | Other engineering activities (M71129) | 314 | 1.45 |
| 13 | Support for petroleum & natural gas extraction (B09100) | 282 | 1.30 |
| 14 | Security & commodity contracts dealing (K66120) | 279 | 1.29 |
| 15 | Other research on natural sciences & engineering (M72190) | 278 | 1.28 |
| 16 | Accounting & auditing (M69201) | 275 | 1.27 |
| 17 | Non-specialised wholesale trade (G46900) | 261 | 1.20 |
| 18 | Financial management (M70221) | 255 | 1.18 |
| 19 | Engineering-related consulting (M71122) | 253 | 1.17 |
| 20 | Sport clubs (R93120) | 230 | 1.06 |
| 21 | Patent & copyright agents; other legal activities (M69109) | 224 | 1.03 |
| 22 | Security dealing on own account (K64991) | 223 | 1.03 |
| 23 | Manufacture of motor vehicles (C29100) | 217 | 1.00 |
| 24 | Solicitors (M69102) | 212 | 0.98 |
| 25 | Activities of insurance agents & brokers (K66220) | 195 | 0.90 |

**Notes:** Counts and shares in top 25 5-digit industries among remittance basis users in 2015. Industry classification based on the Standard Industrial Classification (SIC) 2007 version. Individuals report their employer, or (in the case of self-employment or partnership income) their business description on their tax return, and HMRC convert these fields to a SIC code. We assign individuals with multiple different sources (or multiple employers) to the SIC code associated with the single largest earned income source which has a non-missing SIC code. We exclude individuals with investment or pension income as their single largest source (except in the case of owner-managers of closely-held companies), and people with no employment income (7,400 remittance basis users, representing 25% of the total). Remittance basis users are non-domiciled individuals who elect to benefit from remittance basis tax treatment and report having at least £2,000 in unremitted income. Their offshore returns are exempt from UK tax as long as they are not repatriated to the UK.
**Source:** Authors' calculations based on HMRC administrative datasets.

# Appendix B Methodology: further details

In this appendix, we explain our approach to estimating the unremitted investment income and capital gains of remittance basis users, and the counterfactual tax revenue that they would be paying if they lost access to the remittance basis but remained in the UK. We use this to compute the change in the net-of-average-tax rate due to the deemed domicile reforms, which we need to estimate the migration elasticity in Section 4.

Determining income, capital gains, and counterfactual tax paid of remittance basis users is challenging because unremitted income and gains do not have to be reported to the UK tax authority. Our methodology aims to leverage as much information from the tax data as possible, following a three-step approach: (i) we estimate a lower bound for unremitted investment income and gains exploiting policy features of the remittance basis regime; (ii) we identify a comparison pool of similar UK domiciliaries; (iii) we impute investment income, gains, and counterfactual tax as the average within the comparison pool. In the following, we consider each of these steps in turn.

## B.1 Estimating a lower bound

While individuals taxed on the remittance basis are not required to report their unremitted income and gains to the UK tax authority, we can calculate a lower bound given by the amount required to make it worth losing the UK personal allowance and/or paying a charge to access the remittance basis. As described in Section 2.2, the population of remittance basis users focused on in this paper has unremitted income of at least £2,000 by definition which provides an overall lower bound.

The Remittance Basis Charge applies to individuals who have been living in the UK for a significant number of years. From tax year 2009, individuals who have lived in the UK for at least seven of the previous nine years must pay £30,000 to claim the remittance basis ('7-in-9 charge'). Since 2013, the charge for individuals living in the UK for at least 12 of the preceding 14 years has been increased to £50,000 ('12-in-14 charge'; further raised to £60,000 from 2016). In 2016 and 2017, a charge of £90,000 applied to remittance basis claimants who had spent at least 17 of the last 20 years in the UK ('17-in-20 charge').[14]

We make the plausible assumption that individuals willing to pay a charge to claim the remittance basis save at least as much in tax on their unremitted income. The level of unremitted income implied by the tax saved depends on taxpayers' marginal rate. The lower the tax rate that would be paid on the unremitted income were it subject to UK Income Tax, the higher the income implied by willingness to pay the charge. Dividing

[14]The 17-in-20 charge became obsolete when the deemed domicile reform was implemented in 2018 (see Section 4.1 for more details on these reforms).

the level of the charge paid by the top marginal income tax rate of 45% provides a lower bound estimate of the unremitted income of remittance basis claimants. The resulting lower bound estimates of unreported income are £67,000 for the 7-in-9 charge, £133,000 for the 12-in-14 charge, and £200,000 for the 17-in-20 charge.

As 93% of individuals claiming the remittance basis in 2018 have been UK resident for fewer than seven of the previous nine years, they are not yet required to pay a charge. From this population, some individuals will cease being a UK tax resident prior to reaching the threshold for paying the charge; others will stay in the UK and pay the charge; and a third group will stay but choose not to pay the charge and instead be taxed on the arising basis. For each remittance basis user with fewer than seven years of residence in 2018, we estimate the probability of paying a charge in the future. To obtain these probabilities, we first regress an indicator variable for paying a charge (separately for the 7-in-9, 12-in-14, or 17-in-20 charge) on individual-level predictors using data on all remittance basis users between 2009 and 2017. As predictors, we include age, gender, UK earned income, UK investment income, industry dummies, and mean house price in the local area of residence. As we do not want to impose linearity, continuous variables are split up into bins and included as indicator variables. We then use the estimated coefficients to predict the probability of current remittance basis users to pay a charge in the future and factor these into our calculation of the lower bound.

Because the UK personal allowance is the income amount exempt from Income Tax, it can be directly added to the lower bound. The standard personal allowance equals £11,500 in 2018. It is reduced by £1 for every £2 of income above £100,000, so it drops to zero for taxpayers with UK reported income of at least £123,000. Since we can observe all income reported in the UK, we can account for the phasing out to calculate the correct personal allowance for every remittance basis user.

After obtaining a lower bound on unremitted investment income and gains, we calculate the lower bound on *worldwide* investment returns used in Step 2 by adding the remittance basis user's investment returns remitted to and reported in the UK.

The estimated lower bounds are conservative for three reasons. First, being taxed on the remittance basis makes it harder to spend foreign income and gains, since bringing them into the UK would make them subject to UK tax. Thus, it is likely that people only claim the remittance basis if it saves significantly more in tax than what is implied by the charge. Second, given the tax breaks available – e. g. lower tax rates on dividends, various deductions and reliefs – most top earners pay lower effective tax rates than the top marginal Income Tax rate (Advani and Summers, 2020). The minimum income that would make it worth paying the charge is therefore likely to be higher, when the value of the charge is grossed up from the true lower effective rate. Third, we focus on the loss of the personal allowance and the cost of the remittance basis charge as the amount that non-doms forego by electing the pay tax on the remittance basis. This excludes the loss of

other allowances, including for dividends, savings, and capital gains. To the extent that taxpayers would otherwise value and use these, we underestimate the cost of claiming the remittance basis, and hence underestimate the minimum level of offshore tax that a remittance basis user must have.

The implication of this conservatism is that we are likely to underestimate the additional tax due if remittance basis users were to lose access to the remittance basis. This implies that our migration elasticities are likely to be overestimates, since we treat the observed migration as the response to a smaller shift in tax liability than it really would be.

## B.2 Comparing to UK doms with similar characteristics

As many remittance basis users will have significantly higher worldwide investment income and gains than the lower bound calculated in the first step, we obtain more refined estimates by comparing them to non-migrant UK domiciliaries with similar observable characteristics. We restrict the pool of UK doms to non-migrants because being domiciled for tax purposes is exogenous for them. Since UK doms are not eligible to claim the remittance basis, they must report their worldwide investment income in the UK. Our 'donor groups' consist of UK doms with at least as much investment income as implied by the lower bound from step one who live in local areas with similar house prices, have similar levels of UK earned income, work in the same industry, and have similar age and gender as the remittance basis users.[15]

Specifically, within each of the different groups of UK doms defined by the minimum level of investment income, we regress total investment income (or capital gains or tax paid) on individual-level predictors including age, gender, UK earned income, industry, and mean house price in the local area of residence. Again, we split up continuous variables into bins in order to estimate this flexibly.

## B.3 Imputing worldwide income and gains as well as tax paid

We then use the estimated coefficients to predict worldwide investment income (or gains or tax paid) of the corresponding remittance basis users based on their observed individual characteristics. Unremitted income is calculated as the difference between this estimate and the value reported in the UK. Total worldwide income is computed by adding reported earnings because these are fully observed in the tax data.

[15] We use house prices at the level of Lower Layer Super Output Areas (LSOA). This is a very granular measure as LSOAs have an average population of around 1,500 individuals.