

Taxation and Migration by the Super-Rich

Arun Advani, David Burgherr & Andy Summers

[\(This paper also appears as CAGE Discussion paper 630\)](#)

September 2022

No: 1427

Warwick Economics Research Papers

ISSN 2059-4283 (online)

ISSN 0083-7350 (print)

Taxation and Migration by the Super-Rich

Arun Advani*

David Burgherr[†]

Andy Summers[‡]

September 26, 2022

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. Average offshore investment returns for these individuals exceeded £420,000; even without considering other types of income, this puts them in the top 0.2% of the population. A reform in 2017 brought long-stayers and UK-born non-doms into the standard tax system, reducing their effective net of average tax rate by between 8.8% and 13.0%. We find that migration responses were limited: our central estimate of the migration elasticity is 0.02, and across a range of specifications we can rule out elasticities larger than 0.5. Using reforms for the UK-born super-rich who were living abroad, we find that migration elasticities are limited even for recent arrivals, for whom our central estimate is 0.18. Assuming similar elasticities for all non-doms, abolition of the preferential regime would increase tax revenue collected from non-doms by £3.2bn (84%).

JEL codes: F22, H31, J61

Keywords: taxation, migration, capital income, inequality, mobility

*University of Warwick, CAGE, the Institute for Fiscal Studies (IFS), and the LSE International Inequalities Institute (III). This research was funded by the Economic and Social Research Council (ESRC) through the CAGE Research Centre at Warwick (ES/L011719/1) and ‘Top Flight’ New Investigator Grant (ES/W001683/1), and by LSE International Inequalities Institute, LSE Law, and Warwick Economics. This work contains statistical data from HM Revenue and Customs (HMRC) which are Crown Copyright. The research data sets used may not exactly reproduce HMRC aggregates. The use of HMRC statistical data in this work does not imply the endorsement of HMRC in relation to the interpretation or analysis of the information. The authors thank Helen Hughson, Felix Koenig, and Lorenzo Pessina for foundational work on which this analysis builds; the entire HMRC Datalab team for insights and support; and John Barnett, Emma Chamberlain, Lindsay Pentelow, and Nimesh Shah for advice and insight into non-dom policy. Correspondence: Dept of Economics, University of Warwick, Gibbet Hill Road, Coventry, CV4 7AL. Email: a.advani.1@warwick.ac.uk.

[†]LSE III. Correspondence: International Inequalities Institute, London School of Economics, Houghton Street, London, WC2A 2AE. Email: d.m.burgherr@lse.ac.uk.

[‡]London School of Economics, III, and CAGE. Correspondence: LSE Law, London School of Economics, Houghton Street, London, WC2A 2AE. Email: a.d.summers@lse.ac.uk.

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, born in the UK to a foreign father, or born in the UK but subsequently lived abroad for a substantial period 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 income unless it is brought into the UK. A reform in 2017 removed access to the remittance basis for long-stayers and those born in the UK to a UK father. Long-stayers experienced an 8.8% fall in the share of their income they could keep post-tax; while the UK born experienced a fall of 11.3–13.0%. 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 these reforms led to very little migration. Our estimated migration elasticity (elasticity of emigration with respect to the net of tax rate) for long stayers is 0.02, and for recent UK-born arrivals it is 0.18. Studying the fiscal effects of abolishing the remittance basis, even after accounting for the loss of existing tax paid by those who leave, we find tax revenue from non-doms would increase by £3.2bn, a 84% increase relative to the Income and Capital Gains Tax they currently pay.

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.

Non-doms using the remittance basis are among the highest income, and highest wealth, individuals in the UK. Once overseas income and gains are taken into account, one third of them are in the UK top 0.1% by both income and wealth. All are in the top 1%, meaning they make up around 5% of the top 1%, highlighting the prevalence of non-dom status among the rich. More than a quarter of those with UK incomes above £1m have benefitted from non-dom status (Advani et al., 2022a).

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 or twelve 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 shifts 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 migration responses separately for those covered by Condition A and Condition B.

We first examine the migration response to the Condition B reform, comparing those who had been in the UK for 15–19 years in the year before the reform, to those who had been in the UK for 12–14 years. Using a difference-in-differences approach, we verify that the migration propensity among individuals in the two groups was the same in the years before the reform, and continues to be the same after the reform. The reform reduced the net of average tax rate for those affected by 8.8%. Our point estimate is that residence in the UK for that group declines by 0.2% in response, and we can rule out declines larger than 3.2%. The implied migration elasticity with respect to a change in the net of average tax rate is 0.02, and we can rule out elasticities larger than 0.37.

One potential concern about the wider applicability of these results is that they are based on long-stayers, who by construction may be more settled than more recent arrivals. To address this we use the Condition A reform. Individuals affected by the reform are UK-born to a UK father, so to be classified as non-doms they must have spent substantial time in another country, such that they can claim they have acquired a 'domicile of choice' in this other country: essentially this is a claim that they intend to permanently settle in that country, even while currently resident in the UK. The Condition A reform affects these individuals even if they have only recently become tax resident in the UK. We therefore estimate the migration response of these individuals, comparing them to foreign-born non-doms who also recently became tax resident in the UK.

Again we have a strong first stage: the reform reduced the net of average tax rate for arrivals in the preceding 1–3 years by 11.3%, and for arrivals in the preceding 4–6 years by 13.0%. Point estimates for the elasticity are again close to zero, and confidence intervals include zero. For the most recent arrivals (1–3 years in the UK), our preferred elasticity estimate is 0.18, and we can rule out elasticities larger than 0.64.

One reason why migration responses are so important when considering the revenue effects of tax reform is that the tax loss from migrants is not only the potential static revenue that is implied by reform, but also all of the inframarginal tax they are already paying. For this reason we investigate how these migration elasticities vary with existing tax paid. We find that the migration elasticity is highest for those who reported

little UK income, and pay little UK tax, although the point estimate is still relatively modest at 0.34. Those who are paying relatively more tax already are also more likely to be working, typically in industries that pay more in the UK than elsewhere (Advani et al., 2020), which likely contributes to their relatively weak mobility even in the face of large tax changes.

Taking these results together, we evaluate the effects of further reform to the remittance basis, reducing the length of time a taxpayer has to be resident before they are considered to be deemed domiciled in the UK. We find that abolition of the remittance regime, effectively deeming a taxpayer domiciled on arrival, would increase the tax revenue paid by current remittance basis users by £3.2bn, a 84% increase on the total tax they currently pay, even after accounting for migration responses.

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, 2020) and rates of wealth tax (Agrawal et al., 2022; Brülhart et al., forthcoming). 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. The offshore income of the non-doms is enough to put them in the top 0.2% of the UK income distribution by itself. 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 either a threshold in the length of time in the UK or an accident of nativity. 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 very 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). The closest paper 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 very 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, rather than primarily being high earners. On the one hand, this could lead non-doms to be more responsive to tax rates, since they are not tied to the UK by virtue of their work. On the other hand, their high wealth may mean that higher tax rates have little impact on their lifestyle, and are not sufficient to warrant emigration. We find the latter effect dominates: unlike the merely rich, the super-rich appear to not be very responsive to taxation.

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 becoming 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 large emigration flows.

The remainder of the paper is organised as follows. Section 2 outlines the policy context and data sources, providing evidence on the high income and wealth of non-doms. Section 3 explains the recent policy reforms, and how we use them to identify and estimate migration responses by the super-rich. Section 4 provides estimates of migration responses by the super-rich in response to increases in their capital tax rates. Section 5 describes how equal tax treatment for migrants would affect tax revenue. Section 6 concludes.

2 Context, data, and evidence on the super-rich

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, known as ‘non-doms’. Non-doms are entitled to claim the remittance basis of taxation, whereby they are only liable to UK tax on their foreign income and gains if these are brought into or used in the UK. 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 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.

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

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

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

³A 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.

⁴The 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.

least once in their lifetime. As we show below, there is also a high probability that these individuals move 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.

The overall effect of these rules is that individuals who live in the UK but maintain global 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.

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 non-dom status or the remittance basis.

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. In 2018, there were around 26,000 such remittance basis users.

⁵There 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).

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.

Mobility among non-doms is high. In 2018, around 10% of non-doms who were present and using the remittance basis in 2017, and had been in the UK for 12–14 of the previous 20 years, chose to emigrate (see Appendix Figure A1). This group was not affected by any reform at the time, and comprised of people who had spent a substantial amount of time in the UK already, indicating the high mobility of this group, at least from the perspective of tax residence.

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.⁶ 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 etc (‘investment income’). The measure of gains includes all taxable

⁶A 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.

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 (i.e., 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 earnings (even if these are not taxable in the UK),⁷ and any foreign investment income and gains that they have remitted to the UK in that year.⁸ 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.

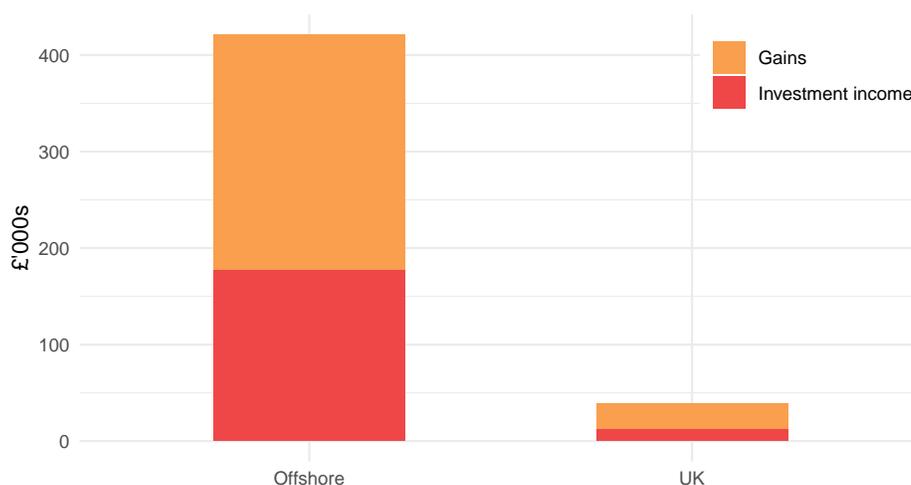
Second, we use the universe of personal tax records to select a pool of UK domiciled taxpayers (‘UK doms’) who (i) reported at least as much investment income and gains as the remittance basis user’s lower bound on worldwide investment returns (computed in Step 1); and (ii) who look most similar to the 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

⁷Foreign 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.

⁸This includes any income and gains that arose in a previous tax year whilst the individual was UK resident and using the remittance basis.

Figure 1: Average offshore and UK reported investment returns for remittance basis users, 2018



Notes: Average investment returns for remittance basis users, split by whether reported in the UK or arising offshore and unreported in the UK. Remitted foreign-source investment income and gains are included in UK (reported) income. 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. UK returns reported in tax filings. Offshore returns 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.

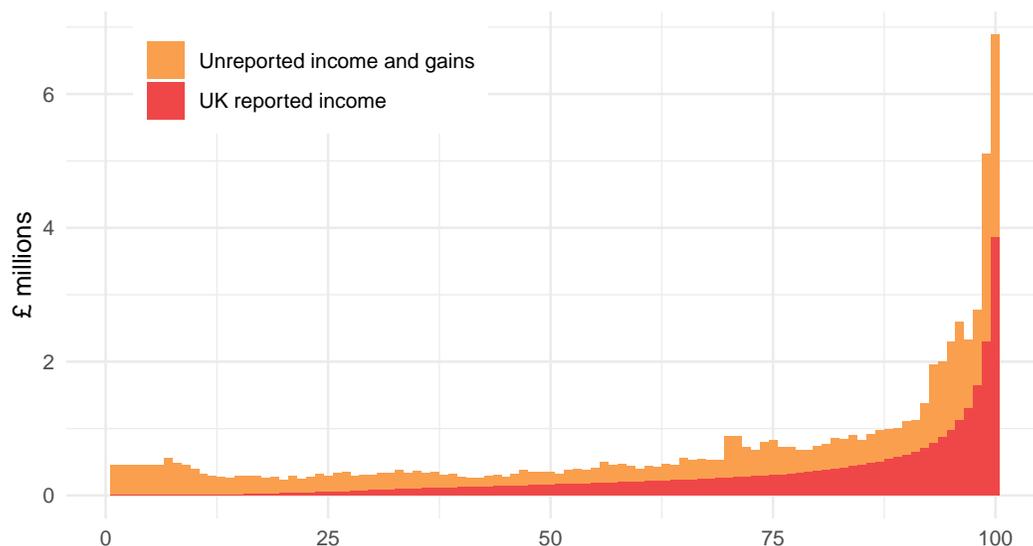
and gains actually reported by the remittance basis user. To give their total worldwide income and gains, we add their actual reported earnings (including any foreign earnings not taxable in the UK) since these are fully observed.

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 find that non-doms using the remittance basis have an average of £420,000 in unreported offshore investment returns (Figure 1). This compares with just £39,000 of investment returns reported in the UK. Around two-thirds (64%) report zero investment income, perhaps unsurprisingly given the detrimental incentives created by taxing UK investment but not foreign investment. The mean value of £460,000 in investment returns is enough to put someone into the top 0.1% in the UK distributions both of income and (by capitalising these returns) of wealth (Advani et al., 2022b).

Looking at the relationship between offshore investment returns and total income reported in the UK (from earnings and investment), we see a U-shaped pattern (Figure 2). Remittance basis users with high

Figure 2: Average level of offshore and UK reported investment returns across the UK income distribution among remittance basis users, 2018



Notes: Average offshore investment returns and UK reported income for remittance basis users. 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. UK returns reported in tax filings. Offshore returns estimated by comparison to UK domiciliaries with similar characteristics, who – unlike remittance basis users – have to report worldwide income and gains (see Appendix B). Averages are computed separately for each percentile bin of the distribution of UK reported income among remittance basis users. About 6% of remittance basis users have zero UK reported income so they are combined in the bottom bin.

Source: Authors’ calculations based on HMRC administrative datasets.

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 £3.1m. 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 their low UK incomes, these remittance basis users are living in areas with high house prices and 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.

One striking finding is that across the distribution of remittance basis users, once overseas income and gains are taken into account, the average for each percentile far exceeds the threshold to be in the UK’s top 1% which was £132,000 in 2018 (Advani and Summers, 2020a). More than a third are in the UK’s top 0.1%. Non-doms are therefore not only globally connected, but clearly among the richest individuals.

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 non-doms to the reforms that we are studying.

3 Empirical strategy

3.1 Deemed domicile reform

Before the deemed domicile reform was implemented in tax year 2017-18, all non-doms were allowed to use the remittance basis of taxation which exempted their offshore income and gains from UK tax as long as they did not bring it into the UK. For individuals with large offshore income and gains, this provided a very large tax benefit. Individuals who had spent a minimum number of years as UK resident were, however, required to pay a lump sum charge to access the remittance basis: individuals who had been tax resident in the UK in at least 7 of the 9 previous years had to pay a charge of £30,000; those who had spent at least 12 of the preceding 14 years in the UK had to pay £60,000; and individuals who had been UK resident in at least 17 of the previous 20 years had to pay £90,000. Further, remittance basis users lost access to the UK tax allowances, including the Income Tax personal allowance and Capital Gains Tax allowance.

The aims of the deemed domicile 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. To achieve these goals, two conditions were defined under which taxpayers are ‘deemed to be UK domiciled’ for tax purposes (‘deemed dom’), removing their access to the remittance basis for taxation. ‘Condition A’ of the reform holds that residents born in the UK to parents with a UK domicile (‘UK domicile of origin’) are 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 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. In practice, the special tax treatment of non-doms was not entirely abolished in the case of Condition B deemed doms because income and gains retained in a non-UK resident trust are not taxed.⁹

3.2 Identification and estimation

Since the deemed domicile reform affects a subset of remittance basis users, we compare those subject to the policy change to similar remittance basis users who are unaffected and thus form a natural control group

⁹By contrast, these trust protections are not available to those who are deemed domiciled under Condition A.

to identify the causal effect of the reform. This allows us to estimate how changes in average tax rates impact decisions by the super-rich over whether to emigrate. The tax rate faced by those losing access to the remittance basis increases substantially as a consequence of the reform because their offshore income, in addition to their UK income, becomes subject to UK income tax (see Section 2.4). We exploit this exogenous variation to estimate the migration response to changes in the average tax rate using a difference-in-differences design. Accordingly, identification of the causal effect of the tax increase on outmigration is based on the parallel trend assumption. The underlying idea is that the probability to stay UK resident of those who saw their tax burden increase would have followed the same trend in absence of the reform as that of comparable individuals who did not experience a change in their tax treatment in 2018.

We focus on individuals claiming the remittance basis in 2017, the year immediately preceding the reform. To study the effects of Condition B of the deemed domicile reform, we define treatment and control group based on the number of years individuals have been UK resident in the two decades before 2018. For the key identifying assumption to hold, treatment and control group need to be as similar as possible. Thus, we only include individuals in proximity of the threshold, comparing individuals who have been UK resident just long enough to be affected by the policy to individuals who have spent a significant number of years in the UK but are slightly below the policy cutoff. Specifically, we estimate the migration response of individuals deemed UK domiciled under Condition B by comparing people who have spent between 15 and 19 of the past 20 years in the UK (treatment group) to those who were UK resident for 12–14 years over the same period (control group).¹⁰ To avoid that individuals in the control group become subject to paying a remittance basis charge at the time of the reform which would result in a simultaneous change in their tax rate, we condition on paying a remittance basis charge in the base year.

One limitation of Condition B in terms of external validity is that it directly affects only long-stayers, those who have been in the UK at least 15 of the last 20 years. To identify whether recent arrivals are more responsive, we also make use of the Condition A reform. Here we define as the treatment group individuals who were able to claim non-doms status despite being UK-born to a UK father: this is the group affected by the reform. For individuals in this group to have been claiming non-dom status, they must have spent substantial time abroad, such that they had established a new domicile (permanent home) elsewhere, before returning. We group these individuals by the time they have spent in the UK since returning from abroad, and compare them to individuals claiming non-dom status but who are foreign-born (or UK-born to a foreign father) and have spent the same amount of time in the UK since first arriving from abroad.

In the case of each reform, to assess the validity of the parallel trends assumption, we examine the pre-trends in migration behaviour estimated using a dynamic difference-in-differences specification of the

¹⁰We show that our results are robust to changing the definition of the control group in Section 4.

following form:

$$Y_{it} = \sum_{\substack{k=2014 \\ k \neq 2017}}^{2018} \beta_k \times \mathbb{1}\{t = k\} \times T_i + \mu_i + \lambda_t + \varepsilon_{it}, \quad (1)$$

where Y_{it} is an indicator variable for whether individual i is UK resident in year t , μ_i denotes individual fixed effects, λ_t denotes year fixed effects, and ε_{it} represents the idiosyncratic error term. T_i is the treatment group indicator defined above. The coefficients β_k for $k < 2017$ can be interpreted as pre-trends, while β_k for $k = 2018$ captures the average effect of the tax hike relative to 2017. As usual, the coefficient of the pre-reform year, 2017, is normalised to zero. Through inclusion of individual fixed effects, we control for any individual characteristics that could confound our estimate. Furthermore, by focusing on a sample of remittance basis users close to the threshold regarding the number of years spent in the UK, treatment and control group are likely to have similar characteristics in general. Year fixed effects absorb any year-specific shocks from changes to other policies or the broader economic situation that affect treatment and control group similarly. Standard errors are clustered at the individual level.

After finding empirical support for the parallel trends assumption (see Section 4.1), we estimate the migration elasticity using an instrumental variable difference-in-differences approach:

$$Y_{it} = \eta \times \log(1 - \tau_{it}) + \mu_i + \lambda_t + \varepsilon_{it}, \quad (2)$$

where the log net of average tax rate, $\log(1 - \tau_{it})$, is instrumented by the (static) difference-in-differences treatment indicator, $\mathbb{1}\{t \geq 2018\} \times T_i$. Thus, we only use the tax change induced by the reform to estimate the elasticity. Again, we include individual fixed effects and year fixed effects, and cluster standard errors at the individual level. The migration elasticity η captures the effect of a one percent increase in the net of average tax rate on the probability to stay UK resident.

As we cannot directly observe the worldwide income of remittance basis users, the calculation of their net of average tax rate builds on our estimation of offshore income and Income Tax hypothetically paid on worldwide income (see Section 2.4). In the pre-treatment period, we compute the net of average tax rate by dividing the observed Income Tax paid by the sum of total income reported in the UK and estimated offshore investment income. The calculation of the net of average tax rate in the post-treatment period depends on treatment status: in the treatment group, it is calculated as the net of average tax rate that would have applied if individuals were subject to UK tax on their worldwide income in 2017; in the control group, it is equal to the net of average tax rate under the remittance basis in 2017.

4 How large is the migration response of the super-rich to tax increases?

4.1 Migration response to tax increases

The removal of the remittance basis for long-staying non-doms creates very little migration in response. Focusing on non-doms who had been using the remittance basis in 2017, the year before the reform, we find that those who had been in the UK for 15–19 of the previous 20 years when the reform came in were 0.2% less likely to be in the UK after the reform than non-doms who had been in the UK for 12–14 years when the reform came in. Figure 3 shows the dynamic difference-in-differences estimates. It is clear that the migration rates of the two groups evolved similarly in the years prior to the reform, and continued to remain similar post-reform. We can rule out migration responses larger than 3.2%.

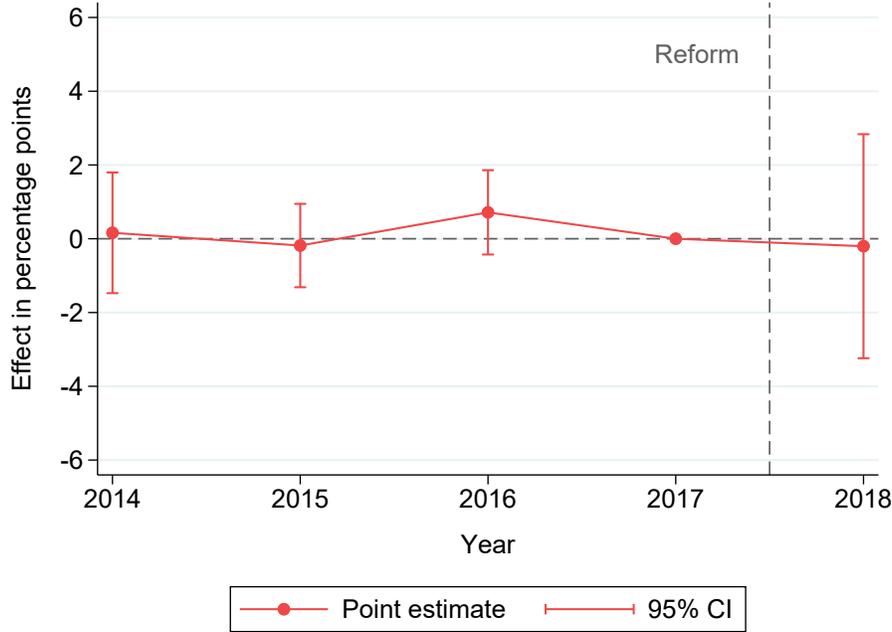
Our preferred control group includes remittance basis claimants who have been living in the UK for between 12 and 14 years over the last two decades because their duration of UK residency is most similar to the individuals affected by the reform. Nevertheless, the results are robust to using smaller or larger control groups (see Appendix Figure A2). Point estimates of the main effect vary between +0.4% and –1.9%. All confidence intervals include zero, so we cannot rule out that individuals did not respond to the reform by leaving the country. Across these different control groups, the minimum of the 95% confidence interval for the effect on the probability to be a UK resident is never lower than –4.5%.

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

4.2 Migration elasticity estimates

Taking an instrumental variable approach, we estimate the migration elasticity of the super-rich. This elasticity measure captures the percentage change in the probability to stay in the UK 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.

Figure 3: Migration response to the 2018 deemed domicile reform



Notes: Dynamic difference-in-differences estimates showing the effect of losing access to the remittance basis on UK residency, 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 (1). Standard errors are clustered at the individual level. Base sample includes individuals paying a remittance basis charge in 2017. Treatment group includes individuals who have been UK resident for 15–19 of the previous 20 years. Control group includes those who have been UK resident for 12–14 years over the same period.

Source: Authors’ calculations based on HMRC administrative datasets.

According to our first stage estimate, 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 8.8% on average. The migration elasticity in our preferred specification is 0.02. This result suggests that super-wealthy migrants do not respond to an increase in the tax burden they face by leaving the country. Our estimate is statistically insignificantly different from zero at the 95% level, and we can reject elasticities larger than 0.37. Across all specifications using control groups who were present in the UK for different periods, the upper bound of the confidence interval rules out elasticity estimates larger than 0.5. We use this upper bound on the migration response to provide a lower bound on tax revenue that could be recovered in Section 5.

One caveat is that the policy change in question 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.

One potential concern about the wider applicability of these findings is that individuals who have been living in the UK for a long time may be more strongly attached to the country, so that the estimated migration response might not translate to recent arrivals. To investigate that possibility, we study the effect of the

Table 1: Migration elasticity

	<i>First stage:</i> net of avg tax rate (1)	<i>Reduced form:</i> Prob(UK resident) (2)	<i>2SLS:</i> elasticity (3)
Panel A: Cond B deemed dom reform			
Static DiD	-0.088*** (0.007)	-0.002 (0.016)	
η_{15-19}			0.019 (0.176)
Observations		8,173	
Panel B: Cond A deemed dom reform (arrival 1–3 years ago)			
Static DiD	-0.113*** (0.010)	-0.020 (0.027)	
η_{1-3}			0.180 (0.236)
Observations		47,819	
Panel C: Cond A deemed dom reform (arrival 4–6 years ago)			
Static DiD	-0.130*** (0.016)	0.021 (0.040)	
η_{4-6}			-0.161 (0.306)
Observations		31,014	

Notes: IV estimates of the migration elasticity 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 probability to be UK resident. 2SLS estimate of the migration elasticity τ is the percentage change in the probability to stay in the country in response to a 1% increase in the net of average tax rate, obtained from estimating Equation (2). All specifications include individual and year fixed effects. Panel A compares 2017 remittance basis charge payers who have been UK resident for 15–19 of the previous 20 years to those who have been UK resident for 12–14 years. Panel B and C compare 2017 remittance basis users with a UK domicile of origin to those with a foreign domicile of origin, conditional on having arrived in the UK 1–3 or 4–6 years ago. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' calculations based on HMRC administrative datasets.

same reform on Condition A deemed doms who lose access to the remittance basis irrespective of how long they have been living in the UK for. Comparing these UK-born non-doms who have recently arrived back in the UK (after spending long enough away to claim foreign domicile) to foreign-born non-doms unaffected by both Condition A and B who arrived at a similar time, we again find little evidence of a migration response to the tax increase. The reduced form estimates and the implied elasticities are close to zero and statistically insignificant. The point estimate is slightly positive (implying some additional emigration) for those who have spent less than three years in the UK, and slightly negative for those who have spent 4–6 years in the UK.¹¹ The dynamic difference-in-differences estimates depicted in Appendix Figure A3 tell a consistent story: that there was close to zero response. The empirical evidence suggests that the migration response

¹¹We specifically focus on non-doms who arrived less than seven years ago in this part of the analysis as these individuals are not yet required to pay a remittance basis charge.

Table 2: Heterogeneity in migration elasticity

	<i>2SLS</i> : Migration elasticity			
	(1)	(2)	(3)	(4)
Aggregate η_{15-19}	0.019 (0.176)			
Low UK reported income		0.337* (0.191)		
High UK reported income		-0.263 (0.199)		
Low UK income tax paid			0.274 (0.184)	
High UK income tax paid			-0.237 (0.206)	
Low offshore income				0.040 (0.655)
High offshore income				0.020 (0.193)
Observations	8,173			

Notes: *IV estimates of the migration elasticity with respect to the net of average tax rate, exploiting Condition B of the deemed domicile reform, depending on whether people had below- or above-median UK reported income, UK income tax, or offshore income in the pre-reform year 2017. Subgroup-specific elasticities are estimated by interacting the net of average tax rate and the instrument with the subgroup indicator. All specifications include individual and year fixed effects. As above, we compare 2017 remittance basis charge payers who have been UK resident for 15–19 of the previous 20 years to those who have been UK resident for 12–14 years.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Source: *Authors' calculations based on HMRC administrative datasets.*

of super-wealthy migrants to tax increases – at least in the short run – is limited, irrespective of whether individuals have been living in the UK for a long time or just entered the country recently.

4.3 Who responds?

Prior evidence has shown that migrants' mobility responses to tax changes depend on the extent to which individuals are integrated into economic activity in their country of residence. To test this hypothesis, we repeat our estimation of the migration elasticity using the Condition B deemed domicile reform, but we estimate separate elasticities for different subgroups. Specifically, we interact the log net of average tax rate in Equation (2) with indicators for having below- or above-median income reported in the UK, income tax paid in the UK, and offshore income in the pre-reform year 2017.

Table 2 displays the results. Columns 2 and 3 show that individuals with low reported income and income tax paid in the UK respond more strongly to the reform, with an elasticity of about 0.3. This is in line with the notion that they are less attached to the UK and thus more likely to leave when the tax incentives provided by the remittance basis are removed. Column 4 documents that the migration response does not vary with the level of offshore investment income, suggesting that heterogeneity in response is less about the

absolute additional amount of tax that will need to be paid on offshore income, and more about the level of economic integration of non-doms in the UK.

4.4 Effect on income reported and tax paid in the UK

Having established that few super-wealthy migrants leave the UK in response to losing access to the remittance basis, we turn to analysing the effect of the reform on income reported in the UK and income tax paid in the UK. For this analysis, we use the same empirical strategy and sample as in the prior analysis of the migration response to Condition B of the deemed domicile reform. We estimate the dynamic difference-in-differences specification in Equation (1) for income and tax outcomes, keeping non-residents in the sample as zero-valued observations.¹²

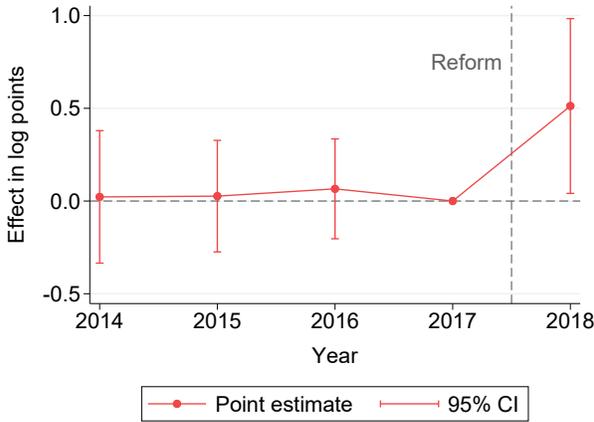
The results in Figure 4 are striking. Panel (a) shows that total income reported in the UK increases sharply after the reform, by around 62%. Consequently, income tax paid in the UK depicted in Panel (b) soars as well. It grows by 147% on average, outpacing the increase in total income. This suggests that the effective average tax rate on currently unreported income would be higher than on existing UK source income, although the confidence intervals for the change in both income and tax overlap. Unsurprisingly, the surge in total income reported and income tax paid in the UK is mainly a result of investment income previously held offshore coming into scope of UK tax. Panel (c) documents an enormous increase in UK reported investment income after the reform, in the magnitude of 346%. This effect size is not implausible considering that the remittance basis provides incentives to keep investments overseas and (almost) all individuals affected by Condition B were paying a remittance basis charge before the reform. Thus, we can assume they have at least £67,000 of offshore investment income since this is the minimum to make it worthwhile paying the lowest remittance basis charge.¹³ Analysing the effect of the reform on the share of remittance basis users with a sharp rise in investment income reported in the UK (of at least £67,000) relative to the previous year, we find an increase by around 27 percentage points, as Panel (d) shows. This is a large effect but at the same time suggests that a substantial share of remittance basis users was making use of the trust protections or other behavioural responses to avoid having to report all their offshore investment income in the UK after becoming deemed UK domiciled.

¹²We apply the inverse hyperbolic sine transformation to continuous outcomes because it approximates the natural logarithm but retains zero-valued observations (Bellemare and Wichman, 2020).

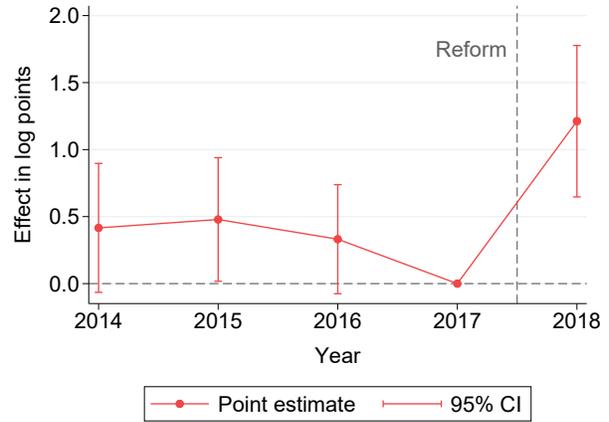
¹³We obtain this threshold by dividing the 7-in-9 charge of £30,000 by the top marginal income tax rate of 45%.

Figure 4: Effect on income and tax paid in the UK

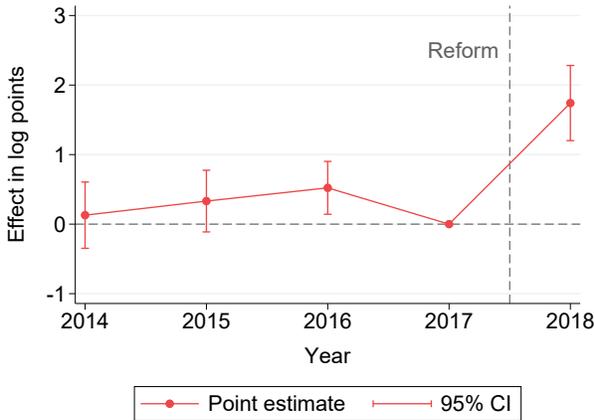
(a) Total UK reported income



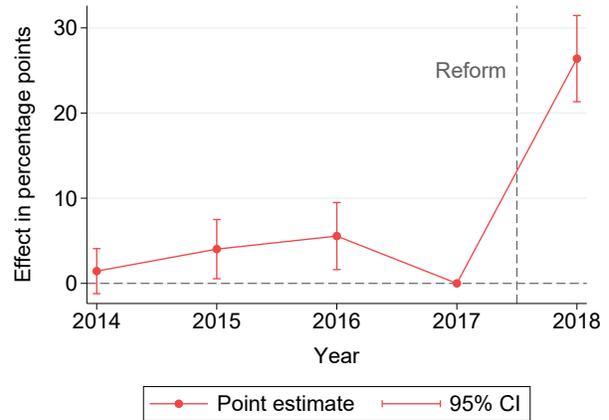
(b) Income tax paid in UK



(c) UK reported investment income



(d) Share with sharp rise in investment income



Notes: Dynamic difference-in-differences estimates showing the effects 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, obtained estimating Equation (1) for different outcomes. We take the inverse hyperbolic sine transformation of UK reported income, income tax paid, and UK reported investment income. Standard errors are clustered at the individual level. Base sample includes individuals paying a remittance basis charge in 2017. Treatment group includes individuals who have been UK resident for 15–19 of the previous 20 years. Control group includes those who have been UK resident for 12–14 years over the same period.

Source: Authors' calculations based on HMRC administrative datasets.

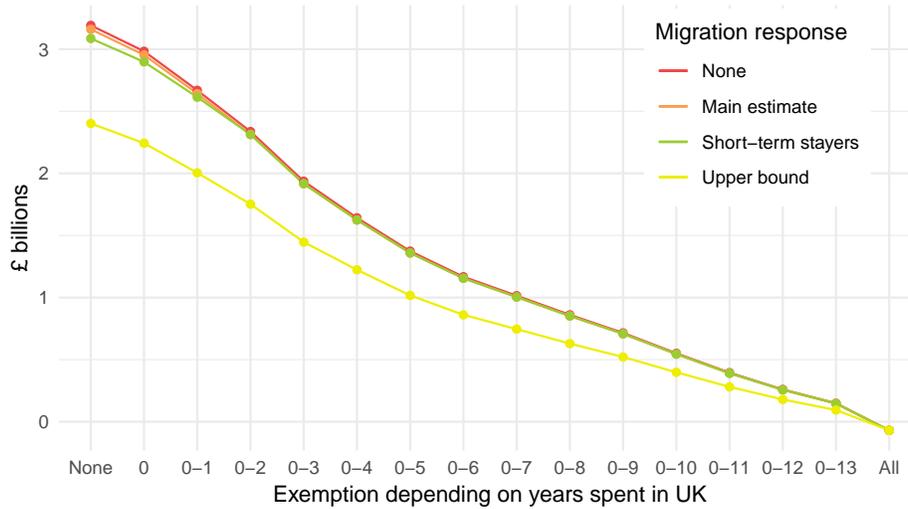
5 Implications of equal taxation for the super-rich

Based on our estimates of offshore investment returns and the migration response of super-wealthy migrants claiming the remittance basis, we can assess the fiscal impacts of a reform removing the remittance basis regime, accounting for the effects on both Income Tax and Capital Gains Tax. We estimate that remittance basis users in 2018 would pay an additional £3.26bn in Income Tax and Capital Gains Tax if their access to the remittance basis was removed. This figure accounts for all actions UK residents can take to minimise their UK tax liability *except* emigration.

To account for the reduction in revenue due to outmigration, we apply our estimates of the migration elasticity to the change in the net of average tax rate at the individual level. Using our headline elasticity estimate of 0.02, we find that a reform abolishing the remittance basis would yield £3.23bn in additional revenue. Subtracting the current remittance basis charge payments of £70m, £3.16bn remain. Allowing for a stronger migration response of individuals who have arrived in the UK within the last three years by applying our elasticity estimate for short-term migrants of 0.2, there is a net fiscal impact of £3.09bn. Using instead the estimated upper bound for the migration elasticity of 0.5 gives us a lower bound of tax revenue that could be collected of £2.5bn and a net fiscal gain of £2.4bn after accounting for the loss of the remittance basis charge.

If the remittance basis were retained for individuals who spend only a few years in the UK, this would substantially reduce the revenue collected. Figure 5 shows the net fiscal impact of a policy exempting recent arrivals, depending on the threshold for exemption and the assumed migration response. For example, if access to the remittance basis was limited to those who have been living in the UK for less than five years, our headline estimate for the net fiscal gain drops to £1.6bn. This is about half of what scrapping the remittance basis altogether would deliver, mainly because the number of remittance basis users who arrived in the UK relatively recently is much larger than of those who have been living in the country for a long time. Nevertheless, offering some exemption to migrants during their first years of living in the UK might still be a sensible policy on the grounds that it eases the administrative burden during the transitional phase of settling in the UK, especially for individuals with limited offshore income and gains for whom the administrative costs may quickly exceed the tax due.

Figure 5: Fiscal impact of abolishing the remittance basis



Notes: Effect of abolishing the remittance basis on tax revenue. 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 fiscal impact is computed using our measures of unreported income, gains, additional tax, current tax, and remittance basis charges, and accounting for the impact of the migration response by applying the migration elasticity to the individual-level change in the net of average tax rate. The different lines assume different migration elasticities: ‘none’ sets the elasticity to 0; ‘main estimate’ sets the elasticity to 0.02; ‘short-term stayers’ incorporates our elasticity estimate of 0.2 for individuals who have arrived within 3 years and sets it to 0.02 for all others; ‘upper bound’ assumes an elasticity of 0.5. Exemption from the policy means retaining access to the remittance basis without having to pay a remittance basis charge. *Source:* Authors’ calculations based on HMRC administrative datasets.

6 Conclusion

This paper examines a key open question in the taxation of capital among the super-rich: how responsive is the migration behaviour of this group to capital taxes. By exploiting a UK reform that created large shifts in the average tax rate for a subset of the super-rich, we have both a powerful first stage and compelling identification, leveraging essentially exogenous differences across individuals within the UK. Combining these, we find that migration elasticities for the super-rich are relatively low, 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 £3.2bn 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). For abolition to raise zero revenue, the migration elasticity would have to be 3.1, which even for recent arrivals is 15 times (and more than ten standard errors away from) the point estimate.

More broadly, 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, the actual mobility in response to taxation is much 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.

Bibliography

- ADVANI, A., D. BURGHER, 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 (2020a): “Capital gains and UK inequality,” Working Paper No. 465, Competitive Advantage in the Global Economy (CAGE).
- (2020b): “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 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 10645.
- BELLEMARE, M. F. AND C. J. WICHMAN (2020): “Elasticities and the inverse hyperbolic sine transformation,” *Oxford Bulletin of Economics and Statistics*, 82, 50–61.
- 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. KRAPP, AND K. SCHMIDHEINY (forthcoming): “Behavioral responses to wealth taxes: Evidence from Switzerland,” *American Economic Journal: Economic Policy*.
- 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. MUNOZ, 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 (2020): “Taxing billionaires: Estate taxes and the geographical location of the ultra-wealthy,” NBER Working Paper 26387.

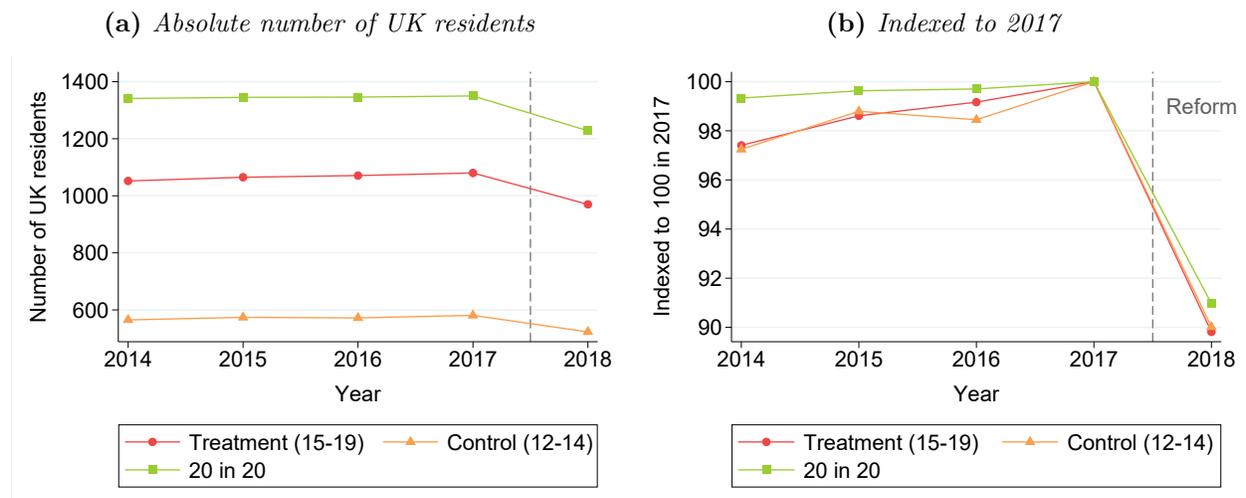
PIGGOTT, J. AND J. WHALLEY (1996): "The tax unit and household production," *Journal of Political Economy*, 104, 398–418.

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: Migration behaviour of different groups of remittance basis users



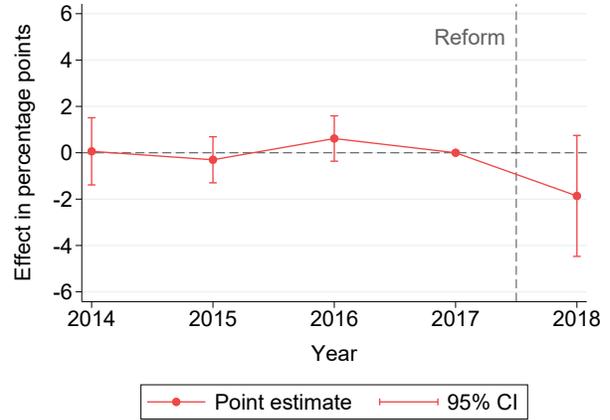
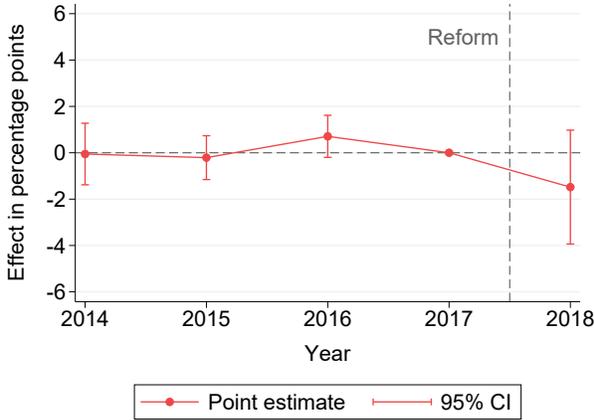
Notes: Number of UK residents in different groups by time spent as UK resident over the previous 20 years. Base sample includes individuals paying a remittance basis charge in 2017. Treatment group includes individuals who have been UK resident for 15–19 of the previous 20 years. Control group includes those who have been UK resident for 12–14 years over the same period. Third group includes individuals who have been UK resident in 20 of the previous 20 years.

Source: Authors' calculations based on HMRC administrative datasets.

Figure A2: Migration responses using different control groups

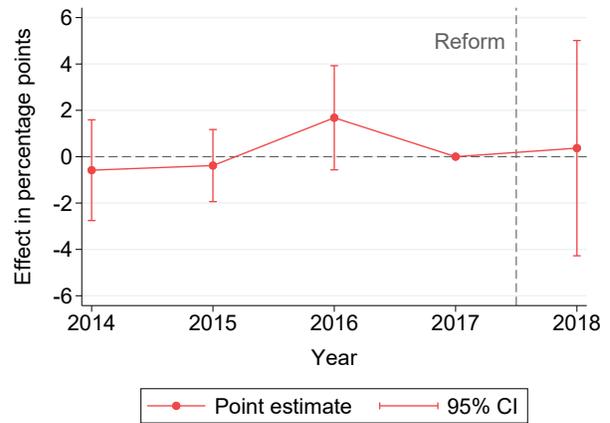
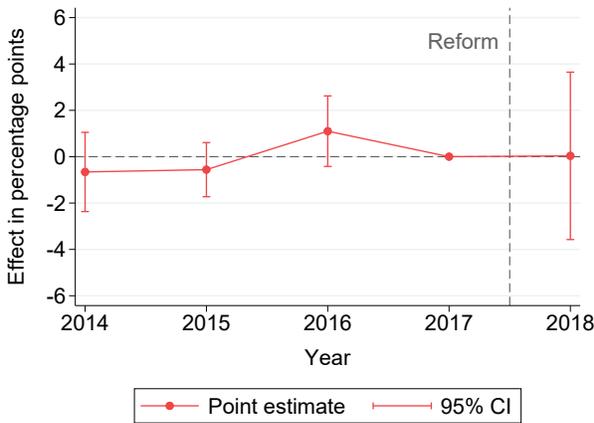
(a) Control group: 10–14 years

(b) Control group: 11–14 years



(c) Control group: 13–14 years

(d) Control group: 14 years

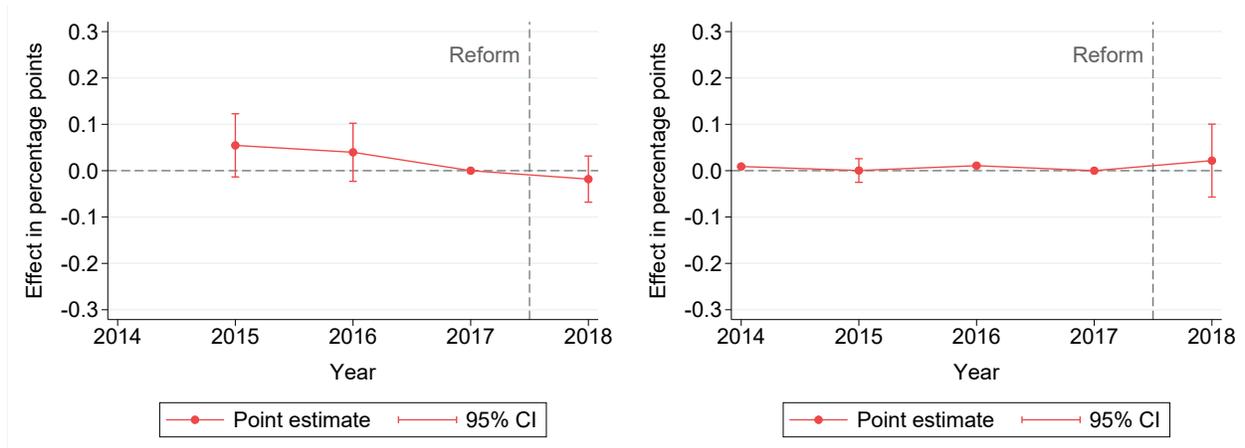


Notes: Dynamic difference-in-differences estimates showing the effect of losing access to the remittance basis on UK residency, exploiting Condition B of the deemed domicile reform. The graphs display year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (1). Standard errors are clustered at the individual level. Base sample includes individuals paying a remittance basis charge in 2017. Treatment group includes individuals who have been UK resident for 15–19 of the previous 20 years. Control group varies across the panels and is defined in the subtitles.
Source: Authors' calculations based on HMRC administrative datasets.

Figure A3: Migration response to the deemed dom reform (Cond A)

(a) *Arrival 1–3 years ago*

(b) *Arrival 4–6 years ago*



Notes: *Dynamic difference-in-differences estimates showing the effect of losing access to the remittance basis on UK residency, exploiting Condition A of the deemed domicile reform by comparing individuals with a UK domicile of origin to those with a foreign domicile of origin. The graphs display year-specific effects relative to pre-reform year 2017 and corresponding 95% confidence intervals, estimated using Equation (1). Standard errors are clustered at the individual level. Base sample includes remittance basis users in 2017. Panel A includes individuals who arrived in the UK 1–3 years ago. Panel B includes individuals who arrived in the UK 4–6 years ago.*

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 both 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, and to gauge the fiscal impact of the remittance basis regime in Section 5.

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 domicillaries; (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.

¹⁴The 17-in-20 charge became obsolete when the deemed domicile reform was implemented in 2018 (see Section 3.1 for more details on these reforms).

Dividing 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, 2020b). 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 domicillaries 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 avoid imposing a functional form.

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.

¹⁵We 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.