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# REVENUE AND DISTRIBUTIONAL MODELLING FOR A UK WEALTH TAX

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## Abstract

In this paper we model the revenue that could be raised from an annual and a one-off wealth tax of the design recommended by Advani, Chamberlain and Summers (2020b). We examine the distributional effects of the tax, both in terms of wealth and other characteristics. We also estimate the share of taxpayers who would face liquidity constraints in meeting their tax liability. We find that an annual wealth tax charging 0.17% on wealth above £500,000 could generate £10 billion in revenue, before administrative costs. Alternatively, a one-off tax charging 4.8% (effectively 0.95% per year, paid over a five-year period) on wealth above the same threshold, would generate £250 billion in revenue. To put our revenue estimates into context, we present revenue estimates and costings for some commonly-proposed reforms to the existing set of taxes on capital.

# 1. Introduction

The Wealth Tax Commission studied the possibility of a wealth tax for the UK (Advani, Chamberlain and Summers, 2020a,b), and delivered a body of research into the desirability and deliverability of such a tax. A crucial aspect for politicians in deciding whether or not to support a tax on wealth is how much revenue it could raise. Meanwhile, public support will hinge at least partly on how much people could be asked to pay.

In this paper we model the revenue that could be raised from an annual and a one-off wealth tax. We first consider an annual wealth tax, and calculate the tax rates that would be needed to raise £10 billion in revenue at various possible thresholds, taking into account likely behavioural effects. We analyse the distributional effect of these tax structures in terms of who pays and how much, both across the wealth distribution and across other characteristics. We also analyse who is likely to face liquidity constraints. For some of these tax structures, we look at how the revenue raised compares to the administrative burden, both for the government and the taxpayer.

We find that a wealth tax could raise a substantial amount of revenue at relatively modest tax rates. For an annual wealth tax, a flat tax of 0.17% on wealth above £500,000 could generate £10 billion in revenue, but at a (proportionally) high ongoing administrative (admin) cost to government of £1.2 billion. The admin costs to taxpayers are even higher, at £7.8 billion per year, increasing substantially the effective tax rate inclusive of all taxpayer costs. At higher thresholds, higher tax rates are required to generate a similar amount of revenue, but aggregate admin costs are lower as there would be fewer taxpayers. For example, at £2 million the ongoing admin costs to government fall to only 1% of the revenue raised, comparable with other major taxes (HMRC, 2019). However, with a £10 billion revenue target, costs to the taxpayer amount to a quarter of revenue raised. This effectively adds a cost of 0.13% of wealth to the headline rate.

We then consider a one-off wealth tax. Since this is a one-off event, certainly not something that would be seen for at least another generation, we consider the tax rate needed to raise £250 billion: the equivalent of raising an effective annual revenue of £10 billion per year over a 25-year period. We also consider a flat rate of 1% a year for five years, as an alternative benchmark. We perform an analogous set of analyses, studying distributional effects, liquidity constraints and admin costs.

We find that a one-off wealth tax charging a tax rate of 4.8% on wealth above £500,000 would generate £250 billion in revenue, before admin costs. This would come at a total cost of £1.7 billion to the government, and £7.8 billion to the taxpayer. Since this is a one-off event, it is possible to achieve a much higher ratio of revenue to cost than under an annual wealth tax. A higher threshold would reduce the admin cost further, though achieving the same amount of revenue would necessitate higher rates. We estimate that with a threshold of £1 million, a one-off tax of 8.5% – or a five-year annualised rate of 1.7% – would be required to raise £250 billion. Under this tax structure, the cost to the government would be 0.4% of the revenue raised. Taxpayer costs would be 1.8% of revenue raised, effectively adding a further 0.14% to the headline rate.

Under a one-off wealth tax with an exemption threshold of £500,000 generating £250 billion in revenue, we estimate that 6.4% of individuals would face liquidity constraints. This rises to 25% with a threshold of £2 million, though the absolute number of liquidity constrained taxpayers would fall, from 526,000 to 154,000. Fewer taxpayers would be liquidity constrained under an annual wealth tax generating £10 billion in revenue.

Finally, we compare the revenue we could get from a wealth tax with the revenue that might be raised by alternative reforms to the taxation of capital: in particular reforms to Capital Gains Tax (CGT), taxation on dividend income, Inheritance Tax (IHT), and Council Tax. Numerous reforms to these taxes have been proposed in recent years (APPG, 2020; Adam, Hodge, Phillips and Xu, 2020; Corlett, 2018; Roberts et al., 2018). We focus on a few headline reforms that are common to almost all reform proposals.

A brief comparison shows that it would be possible to raise similar amounts of revenue to an annual wealth tax, or more, through some of the proposed reforms we examine. For example, raising tax rates on capital gains to be in line with those on income would raise an additional £12 billion, with little implied cost to tax authorities, and equalising rates on dividends would raise around £5 billion. On the other hand, a reform such as revaluing housing assets (and reforming rates) for Council Tax could raise even more substantial amounts, for around half the one-off cost to the government of implementing an annual wealth tax. These alternative reforms do not necessarily avoid some of the challenges inherent in implementing a wealth tax, such as the cost and difficulty of valuing assets.

The remainder of the paper is organised as follows. Section 2 describes the data we use and adjustments we make to better capture wealth held at the top. Section 3 presents our revenue modelling for an annual wealth tax, who would pay it, and how many taxpayers would face liquidity constraints. We also discuss the effect of banding on our revenue estimates. Section 4 presents similar analysis to Section 3, this time for a one-off tax on wealth. Section 5 provides a brief analysis of the revenue that could be raised from alternative reforms to the current tax system. Section 6 concludes.

## 2. Data and Methods

### 2.1 Data

#### Wealth and Assets Survey

Our primary data source is the Office for National Statistics' (ONS) Wealth and Assets Survey (WAS), which is the most comprehensive data source on wealth in the UK. We use the most recent wave of the data, collected in 2016–18, which covers around 40,000 individuals. The data exclude certain geographical regions, in particular Northern Ireland, and the area north of the Caledonian Canal. Individuals living in institutional settings, such as care homes, halls of residence, and prisons, are also beyond the scope of the survey. As a result, we miss around 2% of the UK population.

The WAS collects information on all major asset classes, including pensions, property, physical wealth (consumer durables), financial wealth, and business assets, as well as liabilities. Consumer durables are not included in the UK National Balance Sheet, which is constructed following the System of National Accounts. However, physical assets such as vehicles, art collections, antiques etc. are important household assets, and can be significant stores of value for individuals at the top of the wealth distribution. We therefore include these assets in our wealth definition. To construct a measure of 'net wealth', we deduct the value of loans including mortgages, consumer loans, outstanding balances on credit cards and store cards, outstanding balances on hire purchase agreements and mail order purchases, arrears on household bills and loans, and current account overdrafts. We use this net wealth concept to calculate an individual's tax liability.

In principle, we would like to include in our definition of tax-deductible loans any loan that has been made legally binding, including formal loans between family and friends. Informal loans for which there is no legal contract could be used for tax avoidance purposes if they are not tax deductible. However, in practice such loans cannot be distinguished from gifts, and we do not consider it feasible to include them in the tax base. Unfortunately, the WAS does not distinguish between inter-household loans that have a formal legal contract, and those that do not. In our main measure of taxable net wealth, we do not deduct 'loans from a friend, relative, or other private individual' from an individual's gross wealth, effectively treating them all as informal. Similarly, we exclude money loaned to other individuals from an individual's financial assets. The revenue effect of excluding these informal loans is insignificant - in the tens of millions for a one-off wealth tax raising £250 billion in revenue.

For our purposes, the valuation concept of interest is market value – the amount for which assets could be sold. The WAS measures all assets that are relevant to our definition of the tax base at market value. The exception is household contents, which we address in detail below. These are recorded at replacement cost, which is likely to be significantly higher than the amount for which household items could be sold second hand.

Our revenue modelling assumes a comprehensive tax base, covering each of these asset classes, net of debts. Advani, Chamberlain and Summers (2020b) argue, however, that a wealth tax may need to allow exemptions for low-value assets, and suggest a £3000 exemption per item. We aim to define chargeable wealth – wealth that could be taxed – to be consistent with this. It is not possible to model this precisely using the WAS, as wealth is not reported item-by-item, so we make some necessary approximations.

For physical wealth, we start by excluding the value of all household contents. The questionnaire is structured such that collectibles and valuables are asked about before the value of any other household contents. Respondents are then instructed to "include all items, such as appliances and electronic equipment, furniture, clothing and leisure items (but exclude any vehicles or collectibles and valuables that you have already told me about)". Items worth more than £3000 are likely to have already been included under collectibles and valuables. However, it is possible that some larger appliances and items of furniture would be worth more than £3000. To examine the likelihood of this, we analyse eBay sales data to obtain the average sale price of new and used household items, where we think of the new price as a proxy for replacement cost, and the used price a proxy for market value. Table F1 shows the average price for a range of narrowly-defined household items which might be included under the WAS household contents category. All items are worth far less than £3,000 on average, even when new, and very few items sell for more than £3,000. We interpret this as evidence that the majority of household contents will be exempt from the wealth tax. In Appendix F, we show that the revenue effects of including household contents are small, primarily because these assets are concentrated at the bottom of the wealth distribution. This is important, as it suggests that the revenue implications of taxing these assets will be small relative to the hassle cost of valuing them.

For categories likely to include items worth more than £3000, such as collectables and valuables, vehicles, and personalised number plates, we exclude this wealth only if the total amount reported in that category is less than £3000. We apply the latter rule to property wealth (treating each category separately),<sup>1</sup> and business assets (treating each business separately). For pensions, we apply the £3000 rule to the category as a whole. We deduct the full value of any debts. We do not allow an exemption on financial assets, as it is unlikely that such a rule would be implemented in reality.

We use individual-level, rather than household-level data, to be consistent with the recommendation of individuals as the tax unit in Advani, Chamberlain and Summers (2020b). Most of the wealth recorded in the WAS is captured at individual level. For wealth recorded at household level, which includes the main residence and certain categories of physical wealth such as household contents, we divide the wealth equally between the head of household and their partner, where applicable.

For our liquidity analysis, we use the concept of 'net income' as captured in the WAS, which is measured at the individual level. This includes income from employment, self-employment, state benefits, occupational and private pensions, investment income, and other regular income (such as from friends and family, maintenance, royalties, overseas pensions, and rent), net of any tax and National Insurance contributions paid by the individual. This income concept is broader than fiscal income, which only captures income that is assessable for tax. It is less comprehensive than income as recorded in the national accounts, which also includes income flows not directly received by individuals, such as the imputed rent of owner-occupiers and investment income received by pension funds. For the purpose of analysing liquidity constraints, it is important to consider income flows which an individual could use in practice to fund wealth tax payments. Including income flows such as imputed rents would understate the liquidity issues faced by those living in valuable residential properties, for example. The income definition we use is consistent with the liquidity analysis presented in Loutzenhiser and Mann (2021).

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<sup>1</sup> Property wealth is divided into main residence, second homes, buy to let property, other buildings, UK land, overseas land, overseas property, and other.

## Sunday Times Rich List

A key caveat to relying on the survey data alone is that they under-represent wealth held at the very top of the distribution. In response to this, we follow the approach set out in detail in Advani, Bangham and Leslie (2021), which supplements the WAS with information from the Sunday Times Rich List (STRL). We make a few adjustments to this methodology, as described below.

The STRL captures, in theory, the 1000 richest people or families in Britain. The compilation and measurement of wealth held by rich list individuals draws heavily on their observable business assets. More private forms of wealth, such as financial assets, are generally not captured. We proceed under the assumption that the wealth captured primarily reflects business wealth, and that the total wealth recorded is likely to be an underestimate of the wealth held by these individuals.

Though there are 1000 entries in the STRL, some entries include multiple individuals, such as a husband and wife or other members of the same family. To be consistent with our use of individual-level data in the WAS, we treat each individual named in the STRL as a separate unit. Where there are multiple named individuals per rich list entry, we divide wealth equally among them.

In contrast to Advani, Bangham, and Leslie (2021), we use data from the 2020 STRL. We rescale this to match the aggregate wealth in the 2017 and 2018 (average of the two) lists, to be consistent with the time period in which the WAS data were collected. Our reason for doing this is to leverage information on the country of residence of STRL individuals, which we obtain using matched records from Companies House. Individuals need not have the UK as their main country of residence to be included in the STRL, and it is not clear that all individuals would qualify as resident for tax purposes. This is important for our revenue analysis, as we seek to establish how much revenue could be raised from those who are likely to be eligible to pay.

Though tax residence is not a readily observable characteristic, we can proxy for this using information on country of residence as recorded in the Companies House register. Most individuals in the STRL own or control part of a company registered with Companies House, and these companies are required to submit information on their directors or 'persons with significant control', including information on their usual country of residence.<sup>2</sup> We have matched individuals named in the STRL to Companies House records, using name and date of birth as our matching criteria. We were able to match 83% of the 1,242 named individuals automatically. A further 149 were matched manually, having been missed often as a result of different variants of their name being used across the two data sources. For the remaining unmatched 5% of individuals, we impute information on their country of residence based on the percentage of individuals in each five-percentile bin of the STRL who are UK resident. In total, we classify 84% of individuals as UK resident, although they make up only 74% of the wealth in the STRL.

## 2.2 Pareto Imputation

We account for wealth missing from the top of the distribution in two ways. First, we add individuals in the STRL to our WAS data, removing the handful of individuals whose wealth overlaps with the STRL to ensure they are not accounted for twice. Second, as in Advani,

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<sup>2</sup> A 'person with significant control' is usually someone who (a) owns more than 25% of shares in the company; (b) holds more than 25% of voting rights in the company; or (c) holds the right to appoint or remove the majority of the board of directors.

Bangham, and Leslie (2021), we implement a Pareto adjustment to estimate the amount of additional wealth that should be captured in the top tail of the wealth distribution. The first step increases our estimate of total wealth from £14.2 trillion to £14.6 trillion. The second step increases this to £14.8 trillion.

It is widely observed that the top tail of the wealth distribution approximates a Pareto distribution (e.g. Jones, 2015). By fitting a Pareto distribution using data on wealthy individuals in the WAS combined with the STRL, we estimate the amount of excess wealth that is implied by the shape of the distribution. We refer the reader to Advani, Bangham and Leslie (2021) for full details of this approach.

We implement our Pareto adjustment to the distribution of business wealth (including shares), rather than using total wealth as recorded in the WAS. This is to ensure consistency with what is captured in the STRL, which we believe to be primarily business wealth. We choose a relatively low threshold of £500,000 in business wealth, though in practice the chosen threshold has little impact on the amount of additional wealth estimated. Using this approach, we estimate that there is an additional £280 billion in wealth in excess of the wealth recorded in the WAS and the STRL. This differs from the estimate in Advani, Bangham and Leslie (2020) for two reasons. First, their paper uses household, rather than individual-level data to implement the Pareto adjustment. Second, they assign each entry in the rich list a single household weight of 1, whereas we assume each entry represents the number of individuals explicitly named in the rich list.

To estimate the amount of revenue that could be raised from individuals across the wealth distribution, we must allocate this additional Pareto wealth to observations in our data. We do this by assigning to each individual in our Pareto sample the amount of business wealth they would be expected to have according to their rank in the distribution. We then redefine each individual's total market value wealth, and total chargeable wealth, replacing their reported business wealth with the amount implied by the Pareto distribution.

For the purpose of analysing liquidity issues, it is essential to know how an individual's chargeable wealth compares to their income. However, by adjusting wealth at the top of the distribution, we have distorted this relationship. It is not clear how one could model a top wealth or income adjustment that accurately captures the relationship between these two variables at an individual level. Moreover, we do not wish to overstate the extent of liquidity issues by assuming that wealth has been under-reported while income is accurately captured. As a result, we have chosen to preserve the ratio of wealth to income as it is reported in the survey. We do this by scaling net income by the ratio of an individual's adjusted to unadjusted wealth. At an individual level, the ratio of wealth to net income is therefore consistent with the liquidity analysis undertaken in Loutzenhiser and Mann (2021). This adjustment makes very little difference to our estimates: under each of our proposed tax structures, the percentage of taxpayers deemed to be liquidity constrained is within half a percentage point of the result obtained when reported income is used.

In our revenue analysis, we use the WAS data augmented with the STRL and our Pareto adjustment. They are also included in our analysis of the distribution of taxpayers by age and sex. However, we do not have information on their income, asset composition, or region of residence. STRL individuals are therefore excluded from our analysis of the distribution of taxpayers by region, liquidity constraints, and the asset composition of taxpayers.

## 3. Modelling an annual wealth tax

### 3.1 Approach

We model a wealth tax that is consistent with the recommendations outlined in Advani, Chamberlain and Summers (2020b) using the data on wealth above various thresholds described in the previous section. Our tax covers all adult individuals. Children are not taxed as separate tax units. Instead, their wealth is aggregated with the wealth of their parents. We assume that, in practice, parents would be able to choose who their children's wealth is allocated to, and would do so to minimise their joint tax liability. Accordingly, we allocate children's wealth reported in the WAS to the lower wealth parent, splitting any excess equally. In this way, we preserve the wealth ranking between parents.

Though data from the STRL are included in our analysis, in our main specification we exclude individuals who are classified as non-residents according to their Companies House records, targeting tax residence as the relevant connection criterion.

We also take into account behavioural responses. As outlined in Advani and Tarrant (2021), a net wealth tax is likely to elicit a number of avoidance and evasion responses, including under-reporting, offshore evasion, gifting and fragmentation, asset portfolio recomposition, saving responses, labour supply responses, and migration. Advani and Tarrant (2021) conclude that under a well-designed wealth tax covering all asset classes – as we assume ours will – the overall magnitude of behavioural responses could be limited to a 7–17% reduction in wealth in response to a 1% tax rate on wealth. In our revenue modelling, we take the upper bound as the 'high avoidance' scenario, and the lower bound as the 'low avoidance' scenario. We apply this response to the average tax rate faced by each individual under each tax structure. For example, for an individual facing an average tax rate of 0.5%, we reduce their chargeable wealth by 3.5% in the low avoidance scenario.

The figures 7% and 17% represent *average* behavioural responses, summarising the combined effect of each individual's response along the different margins. By applying this statistic in the way we do, we will miss heterogeneity in avoidance responses across individuals. In practice, some individuals will respond much more than others, and they will respond along different margins. For example, these statistics partly reflect migration responses. Rather than modelling who will choose to migrate and who will stay, we attribute the reduction in aggregate wealth arising from some migration, to a reduction in the wealth of all individuals. In doing so, we assume that behavioural responses are uniformly distributed across the wealth distribution. While this may not hold in practice, we currently have very little empirical evidence on the distribution of behavioural responses to a wealth tax (Advani and Tarrant, 2021). If the wealth tax were at a flat rate (above some threshold), any heterogeneity would not affect our revenue estimates. If the tax were progressive, our revenue estimates could be affected; however, in the absence of information on how behavioural responses are distributed, it is not possible to even sign the direction of the effect. In our distributional analysis, we focus on who *should pay* the tax, and how much they should pay, rather than the amount they would pay after taking behavioural responses into account. This will be unaffected by our method of accounting for behavioural response in our revenue calculations.

Using household-level data we can explicitly model the potential revenue effects of asset splitting between spouses. In addition to our core revenue estimates, which account for avoidance using the elasticities provided in Advani and Tarrant (2021), we estimate the amount of revenue that would be raised if all assets excluding pensions were split equally among the head of household and their spouse. We do not split pensions, since these cannot typically be

transferred across individuals. We compare this to the revenue that would be raised if ownership among spouses were unaffected by the introduction of a wealth tax. In doing so, we assume no other avoidance responses. This is because our overall estimate of 7-17% already accounts for asset splitting, and it is unclear what proportion of this average elasticity can be attributed to asset splitting relative to other responses.

To calculate net revenue, we estimate the admin costs that the taxpayer and the tax authority would face on an ongoing basis. Admin costs to the taxpayer partly reflect the valuation costs to taxpayers which are likely to need professional valuations for their asset portfolios. A range of cost estimates are calculated in Daly, Hughson, and Loutzenhiser (2021); here we estimate a 'central' scenario based on valuation costs amounting to 0.4% of the value of hard-to-value assets (with the same overall cap).

Evidence presented by Burgherr (2021) suggests that there is also a fixed cost of filing which, while generally dwarfed by the valuation cost, should be accounted for. We add a £2000 cost for all taxpayers with hard-to-value assets, reflecting a central estimate from the range he establishes; we do not attempt to account for the opportunity cost of the taxpayer's time for those taxpayers who (we assume) do their own filing. These estimates also do not attempt to account for legal costs of disputes with the tax authority, as the scale and variation of these costs are much less predictable. The valuation cost estimates cover a single year of a tax and do not depend on the tax rate, nor do they vary between a one-off tax and an annual tax; in an annual tax scenario with valuation only necessary every few years, costs could be expected to be lower after the initial valuation.

We also calculate the one-off costs that the tax authority would incur in order to administrate the tax. Our ongoing admin costs are based on the cost to HMRC of auditing Self Assessment (SA) income tax returns. A wealth tax would be administered in much the same fashion, with potential taxpayers having to submit a tax return, a certain percentage of which would be audited by the tax authority. We assume that the cost of auditing a wealth tax return will be the same as the cost of auditing a SA return, which is approximately £2,500 per audit (Advani, Elming and Shaw, forthcoming). We will assume that 5% of wealth tax returns are audited, suggesting that the average cost per tax unit to HMRC from auditing is around £125. To calculate the total ongoing admin cost for each tax structure, we multiply this figure by the number of filers, assuming that anyone who thinks they are within 10% of the tax threshold also has to file a tax return. This means that the population of returns that could potentially be audited will be slightly higher than the number of taxpayers.

There are two types of one-off cost we consider. First, the cost of revaluing residential property, which we assume is done centrally rather than by the taxpayer, as is the case for Council Tax. Second, the cost of designing and developing an IT system for administering the tax.

For the cost of revaluing residential property, we draw on the estimated cost of revaluating properties for Council Tax in England, a project which began in 2001 but was never completed.<sup>3</sup> In 2005 it was estimated that the revaluation would cost the Valuation Office Agency (VOA), which was tasked with conducting the revaluation, £139.3 million in total.<sup>4</sup> An additional £38 million was expected to be incurred in the first year from the cost of appeals. At this point, £45

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<sup>3</sup> The revaluation exercise was due to be completed in April 2007 and would have been the first revaluation since 1991. However, the exercise was postponed until it could happen '...as part of a fully developed package of funding reforms, rather than as a precursor to them, and at a moment of greater financial stability for local authorities' (House of Commons Library Research Paper, 2005).

<sup>4</sup> House of Commons Library Research Paper 05/73, 'The Council Tax (New Valuation Lists for England) Bill' (November, 2005).

million had already been spent on bringing the VOA's systems up to date and digitising documents of paper records, an exercise which would not need fully repeating if the revaluation were resumed. Since these old documents may now partly be out-of-date, we take a conservative approach by assuming that this cost would again be incurred in full. On this basis, the exercise would have cost £180 million according to estimates from 2005. Scaling this to 2018 (the final year in our wealth tax data) by the rate of wage inflation, the most relevant cost here, suggests that a present-day valuation would cost approximately £245 million.

We assume that this £245 million would be the cost of revaluing the entire housing stock. It is possible that some fraction of this cost would be avoided, as not all properties would need to be valued under a wealth tax with an exemption threshold. However, we do not know what this fraction would be. Moreover, valuing properties at the top end of the property distribution is likely to be much more costly than valuing a standard semi-detached house, and so we cannot assume that the cost of revaluing the housing stock is proportional to the number of houses valued. This is certainly not the case, as there will be fixed costs in producing a model for estimating house values which would serve as the primary basis of valuation for the majority of properties. Our cost estimate should therefore be thought of as an upper bound.

As a proxy for the cost of building a new system for administering the tax, we take the cost of designing and developing the Customs Declaration Service, a system which went live in 2018. The system will ultimately process over 250 million customs declarations, calculating the tariffs due on each. The most recent estimate of the total cost of the project is £334 million.<sup>5</sup> This is a comprehensive estimate which includes the cost of planning, designing, construction and delivery, as well as ongoing maintenance costs.

## 3.2 Revenue

In this section we present estimates of combinations of rates and thresholds which would raise £10 billion in tax revenue under a low avoidance scenario, before accounting for admin costs (Table 1). This revenue target is not chosen to in any way be optimal, or reflect any kind of recommendation. Instead it is selected as a useful benchmark, being roughly equivalent to increasing the basic rate of income tax by 2p (HMRC, 2020a).

With a threshold of £10 million, a tax charged at 1.1% would raise £10 billion under a low avoidance scenario, or £8.8 billion with high avoidance. Ongoing admin costs to government here are essentially negligible, although there is some setup cost that is needed.

Lowering the threshold to £2 million, the same amount could be collected with a tax rate of just 0.57% under a low avoidance scenario. Now the number of taxpayers is substantially higher, increasing from 22,000 to 631,000. The aggregate admin costs of the tax would be much higher – the cost being largely borne by the taxpayer rather than the government.<sup>6</sup> Costs to the taxpayer amount to a quarter of revenue raised, effectively adding a cost of 0.13% of taxable wealth to the headline rate.<sup>7</sup>

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<sup>5</sup> HMRC Government Major Project Portfolio data, September 2019.

<sup>6</sup> Note that for purposes of Total Managed Expenditure calculations, the admin cost to government can likely be reduced by around one-third, since these costs are largely salaries, and one third of this cost will be returned to the exchequer in income tax and national insurance contributions. However, the full value of the cost must be taken into account when considering the efficiency of the tax.

<sup>7</sup> This figure is calculated by dividing the aggregate admin cost to taxpayers by aggregate wealth above the threshold, before taking avoidance into account.

At 22,000 taxpayers, the volume of taxpayers under an annual wealth tax beginning at £10 million is similar to IHT (which covers 24,000 taxpayers per year). Comparable amounts could be raised with a progressive tax, covering the same number of taxpayers but at lower rates for those with less wealth, as shown in one particular example in the final row of Table 1.

With a threshold of £500,000, 8% of the revenue raised comes from individuals in the STRL. The importance this group becomes more pronounced the higher the threshold: with a threshold of £5 million, these individuals account for 40% of our revenue estimate. This reflects the concentration of wealth at the very top.

**TABLE 1: REVENUE ESTIMATES FOR AN ANNUAL WEALTH TAX – FLAT AND PROGRESSIVE TAXE**

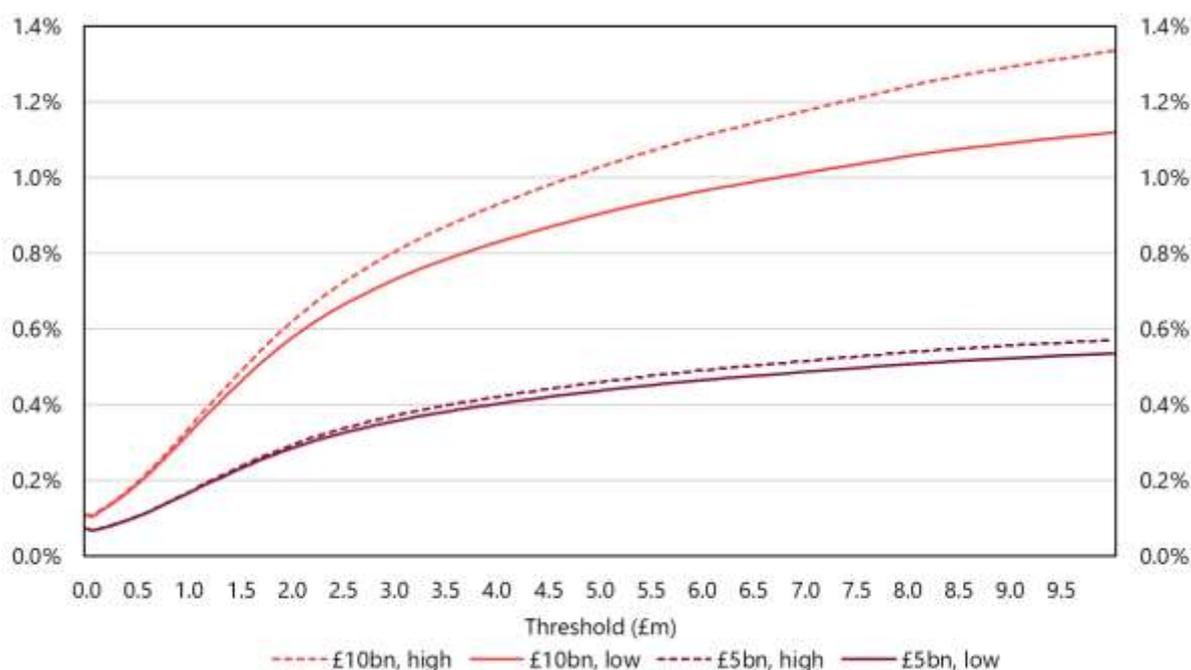
Threshold (£)	Rate	Revenue (£bn)		Taxpayers ('000)	Administrative cost (£bn):			Share of revenue from STRL
		Low avoidance	High avoidance		to taxpayer	one-off to govt	per year to govt	
<b>Flat taxes</b>								
10,000,000	1.12 %	10.0	8.8	22	0.7	0.6	0.003	50%
5,000,000	0.90 %	10.0	9.0	83	1.4	0.6	0.01	40%
2,000,000	0.57 %	10.0	9.4	631	2.5	0.6	0.1	25%
1,000,000	0.31 %	10.0	9.7	3,035	4.6	0.6	0.5	14%
500,000	0.17 %	10.0	9.8	8,240	7.8	0.6	1.2	8%
250,000	0.12 %	10.0	9.9	15,537	10.7	0.6	2	5%
<b>Progressive taxes</b>								
1,000,000	0.10 %							
2,000,000	0.25 %							
5,000,000	0.50 %	10.0	9.5	3,035	4.6	0.6	0.1	29%
10,000,000	0.65 %							

Notes: The rates target £10bn in revenue, taking into account a low level of avoidance, and before the deduction of admin costs.

Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020; Burgherr, 2021; Daly, Hughson, and Loutzenhiser, 2021; House of Commons Library, 2005; HMRC Government Major Project Portfolio data, 2020d.

The amount of revenue raised by a tax with a given threshold can be varied by changing the rates. Figure 1 illustrates the rates that would be required to raise different revenue targets, net of ongoing admin costs to government. Evidently, the rates required to generate a given amount of revenue at a given threshold are higher when individuals are more responsive to the tax.

**FIGURE 1: RATES AND THRESHOLDS GENERATING DIFFERENT REVENUE TARGETS FROM AN ANNUAL WEALTH TAX, AFTER ADMIN COSTS**



Notes: Tax rates are those required to generate the revenue target after admin costs are taken into account.  
 Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

To understand the potential revenue effects from asset splitting, we model the revenue that would be raised if all assets, other than pensions, were split equally between the household head and his/her partner. Using the headline rates presented in Table 1, we first estimate the revenue that could be raised if assets were retained by the household member who owns them currently (Table G1). In the absence of any avoidance responses, revenue would be up to £0.9 billion higher than in our low avoidance scenario. However, if households were to respond to the tax by splitting their assets equally, revenue would be reduced by 1-7% (up to £0.7 billion). Note that this revenue loss is smaller than the revenue loss obtained by moving to our 'low avoidance' scenario. Our 'low avoidance' measure is intended to be comprehensive of the range of behavioural responses available to individuals. It is reassuring to find that the revenue loss from asset splitting – even when modelled to the extreme – is lower than our more optimistic measure of avoidance responses, particularly as asset shifting is a known response to individual taxation (Advani and Tarrant, 2021).

### 3.3 Distributional Effects

If the UK were to introduce an annual wealth tax, who would pay it? And how would the amount of tax paid vary across individuals? In this section, we explore how tax liabilities would vary across the distribution of income and wealth under each of the annual tax structures presented in Table 1, assuming the rates required to generate £10 billion before admin costs under a low avoidance scenario. We then consider the characteristics of taxpayers, specifically considering age, sex, and region. We include individuals in the STRL when looking at the distribution by wealth, age and sex. However, as we have no information on their income nor region of residence, this analysis is based on the WAS data only.

Table 2 shows the amount of tax paid by a representative individual with different levels of wealth. A higher threshold does not necessarily mean that an individual who is still liable to pay the tax will face a smaller tax liability. Taking an individual with £7.5 million in wealth as an

example, the tax liability that this individual faces is £20,150 under a flat tax starting at £1 million. If the threshold rises to £2 million, the rate required to generate the same amount of revenue as before means that the same individual would now face a tax liability of £31,350.

An exemption threshold of £250,000 would not charge any wealth tax to anyone in the bottom 70% of the wealth distribution. Nevertheless, by international standards this would be a very low threshold: only Switzerland is lower (Chamberlain, 2020). With a relatively low exemption threshold of £250,000, the average tax rate faced across the wealth distribution would increase steadily, reaching 0.12% (equal to the marginal tax rate) for those in the top 1%. With a higher exemption threshold, the average tax rate increases more rapidly. Individuals in the top 1% would face an average tax rate of 0.21% with an exemption threshold of £2 million, for a tax generating £10 billion in revenue (see Fig. 2).

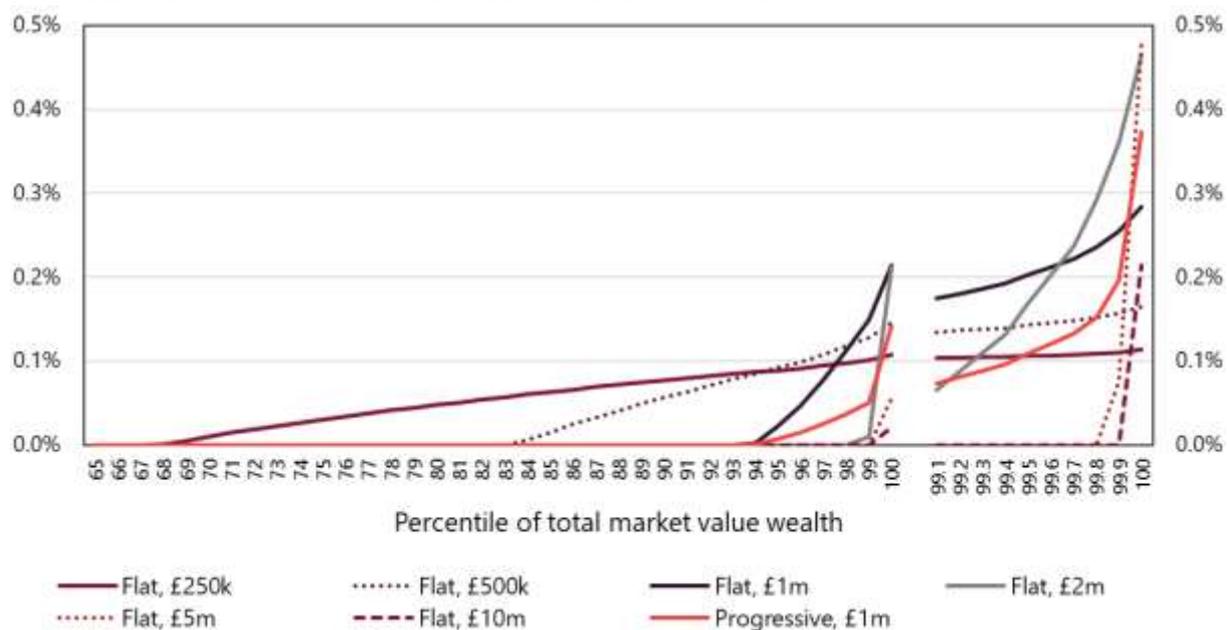
**TABLE 2: AMOUNT OF TAX PAID BY A REPRESENTATIVE INDIVIDUAL UNDER AN ANNUAL TAX WITH DIFFERENT THRESHOLDS, (£)**

Threshold (£)	Rate	Individual net wealth (£)				
		750,000	1,500,000	3,000,000	7,500,000	15,000,000
		0	0	0	0	0
<b>Flat taxes generating £10bn</b>						
10,000,000	1.12 %					56,000
5,000,000	0.90 %				22,500	90,000
2,000,000	0.57 %			5,700	31,350	74,100
1,000,000	0.31 %		1,550	6,200	20,150	16,800
500,000	0.17 %	425	1,700	4,250	11,900	24,650
250,000	0.12 %	600	1,500	3,300	8,700	17,700
<b>Progressive taxes generating £10bn</b>						
1,000,000	0.10 %					
2,000,000	0.25 %		500	3,500	21,000	66,000
5,000,000	0.50 %					
10,000,000	0.65 %					
Number of individuals with similar wealth (within 10%), thousands		1,508	573	107	14	5

Notes: Calculations of the tax liability of individuals at different points of the wealth distribution, under each tax schedule shown in Table 1. 'Number of individuals with similar wealth' shows the number of individuals whose net wealth is within 10% of the representative individual, giving a rough indication of the number of individuals who would face that tax liability.

Source: ONS, Wealth and Assets Survey, 2016–18.

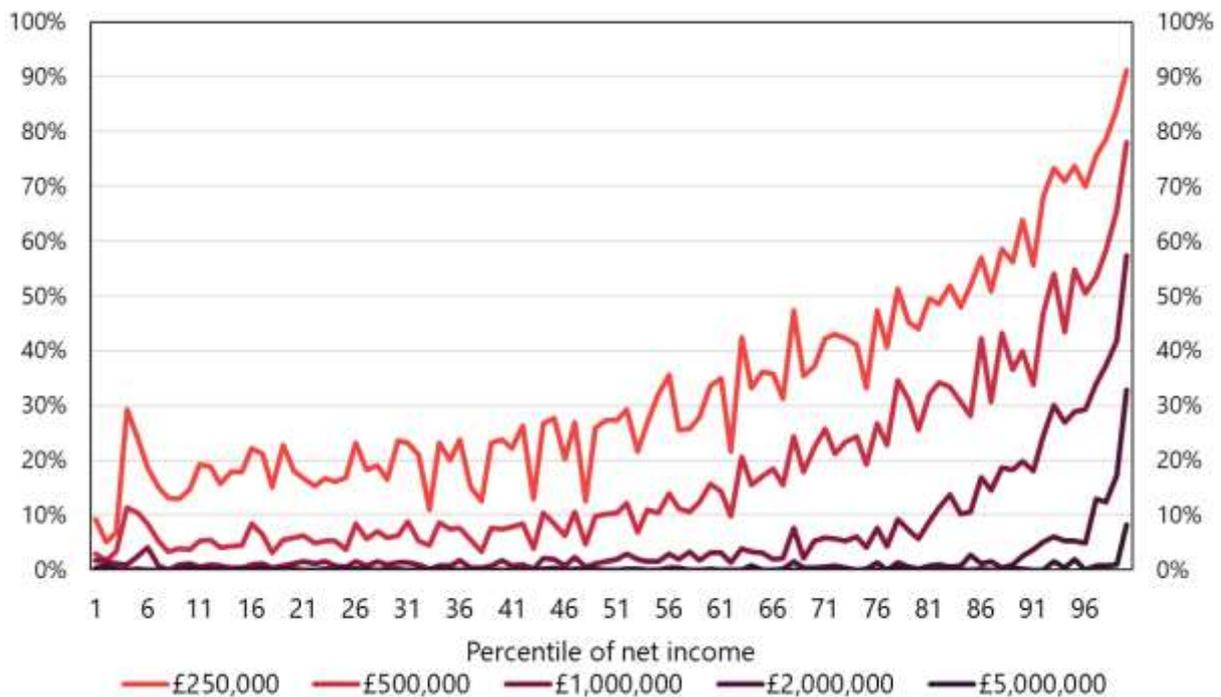
FIGURE 2: MEAN AVERAGE TAX RATE UNDER DIFFERENT ANNUAL TAX STRUCTURES



Notes: All adult individuals are ranked according to their total wealth measured at market value, and grouped into percentiles. Tax rates used are as per Table 1. The average tax rate faced by individual is the amount they *should* pay, and does not take behavioural responses into account. We take the democratic mean of average tax rates faced in each percentile. Appendix A shows the average tax rate by total chargeable wealth. Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

On the whole, individuals higher up the *income* distribution are more likely to pay a wealth tax (Fig. 3). However, at each level of income there is some variation in wealth, and not all high-income individuals have sufficient wealth to become taxpayers. Among those in the top 1% of the income distribution, 91% would pay a wealth tax with an exemption threshold of £250,000, compared with 25% of the population. As the threshold rises to £2 million, 33% would be liable to pay, and at a threshold of £5 million this figure falls to just 8%. Meanwhile, among those at the median of the income distribution, 10% would be liable to pay a wealth tax with an exemption threshold of £500,000.

**FIGURE 3: SHARE OF INDIVIDUALS WHO ARE TAXPAYERS UNDER DIFFERENT EXEMPTION THRESHOLDS, BY INCOME PERCENTILE**



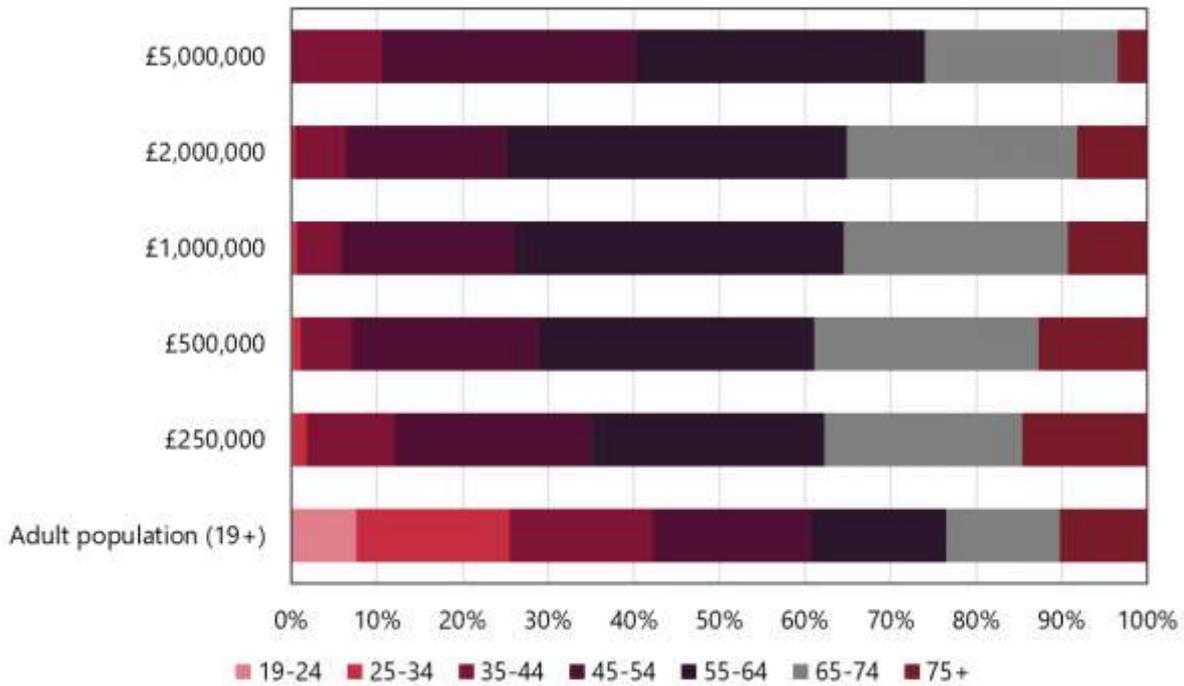
Notes: All adult individuals are ranked according to their net income, and grouped into percentiles. The chart shows the percentage of adults in each percentile group who would pay the tax for different exemption thresholds. The distribution is independent of the rate chosen, for a given threshold. Individuals in the Sunday Times Rich List are excluded from this analysis, as we have no information on their income. We do not show the distribution of taxpayers for thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

Older age groups are significantly over-represented among taxpayers for every threshold (Fig. 4). Despite accounting for just 39% of the adult population, adults over the age of 55 represent 60% of taxpayers when a £5 million threshold applies, rising to as much as 75% with an exemption threshold of £2 million. This figure illustrates clearly that the majority of taxpayers would actually be of working age, with those in the 55–64 age category being the most heavily represented. Only 1–2% of taxpayers are under the age of 35.

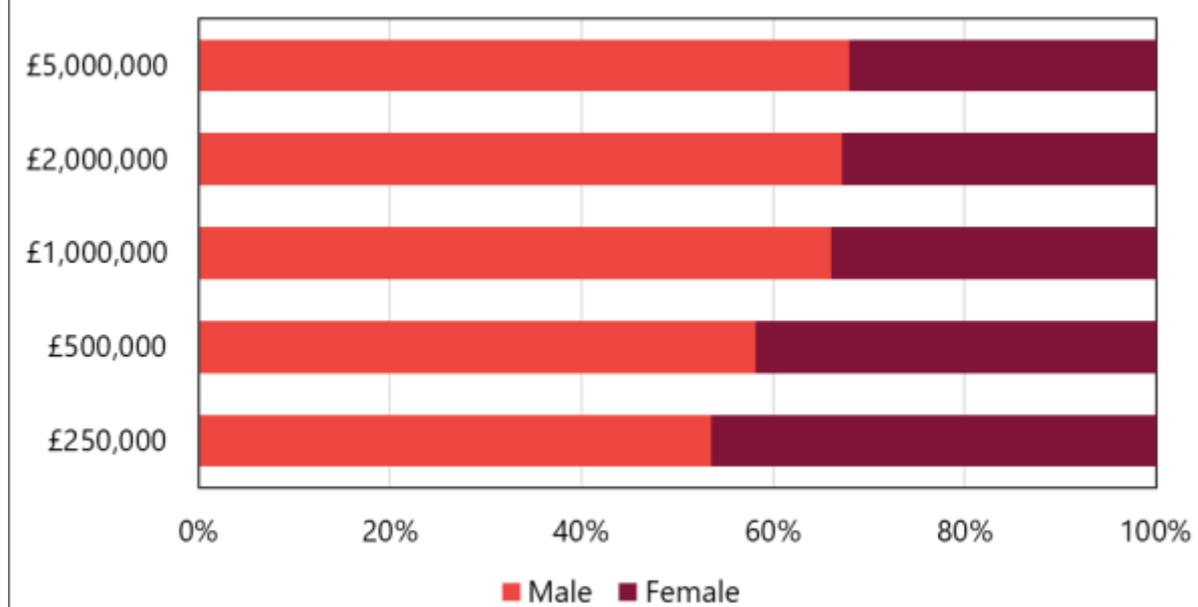
The higher the threshold, the higher the percentage of taxpayers who are male (Fig. 5). For each threshold, female taxpayers are in the minority. The gender imbalance is most pronounced under a wealth tax starting at £5 million, under which 68% of taxpayers are male. Note that this is assuming individuals do not adjust their wealth holdings in response to the tax. For a tax which defines the tax unit as the individual, we might expect some asset shifting within couples as a means of reducing their joint tax liability. This would make the gender imbalance less extreme in practice.

**FIGURE 4: AGE DISTRIBUTION OF TAXPAYERS UNDER DIFFERENT EXEMPTION THRESHOLDS**



Notes: The age distribution of taxpayers above different exemption thresholds is independent of the tax rate. Individuals from the Sunday Times Rich List are included in this analysis.  
 Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

**FIGURE 5: SEX DISTRIBUTION OF TAXPAYERS UNDER DIFFERENT EXEMPTION THRESHOLDS**



Notes: The gender distribution of taxpayers above different exemption thresholds is independent of the tax rate. Individuals from the Sunday Times Rich List are included in this analysis.  
 Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

The geographical distribution of prospective taxpayers is skewed toward London and the South East, regardless of which threshold is chosen. Figure 6 illustrates the distribution of taxpayers for a tax starting at £500,000, under which London and the South East combined would account

for 36% of all taxpayers.<sup>8</sup> By contrast, just 3% of taxpayers live in the North East. The majority of taxpayers live in England; Scotland and Wales account for just 12% of taxpayers. Appendix B shows the geographical distribution of taxpayers for alternative exemption thresholds.

**FIGURE 6: GEOGRAPHICAL DISTRIBUTION OF TAXPAYERS WITH A £500,000 EXEMPTION THRESHOLD**



Notes: This chart shows how taxpayers would be distributed across the country if the tax featured an exemption threshold of £500,000. The distribution is independent of the tax rate. Individuals in the Sunday Times Rich List are not included in this analysis as we have no information on their region of residence. Appendix B shows the geographical distribution of taxpayers using different exemption thresholds. We have no data for Northern Ireland, and so the percentages shown are the percentage of taxpayers in Great Britain living in each region. Source: ONS, Wealth and Assets Survey, 2016–18.

### 3.4 Liquidity Issues

Specific solutions may be required for individuals who face high tax liabilities relative to their income, especially if much of their wealth is illiquid. In this section, we illustrate the extent of

<sup>8</sup> This is the percentage of taxpayers in Great Britain, as we do not have data for Northern Ireland.

liquidity problems faced by individuals under the annual tax structures presented in Section 3.2. We ask how many individuals are liquidity constrained under each of the tax structures raising £10 billion in revenue, and which groups of individuals are most affected.

In principle, we may define an individual as being liquidity constrained if, as a result of their wealth tax liability, they would be forced to either reduce their consumption and standard of living, or maintain their consumption by converting some of their illiquid wealth into cash. However, in practice, we do not have a comprehensive dataset which captures income, wealth, and expenditure at an individual level. Rather than combining multiple datasets to approximate consumption levels at different points of the wealth distribution, we adopt a simpler approach. For each tax schedule, we classify an individual as being liquidity constrained if their immediate tax liability exceeds 20% of their net income and 10% of their net income plus liquid assets. In Appendix C, we illustrate the extent of liquidity issues using alternative cut-offs, to show how our estimates change when this definition becomes more or less generous.

We recognise that a specific solution is needed for the payment of taxes on pension wealth, as individuals below State Pension Age (SPA) generally do not have access to these funds. As recommended in Advani, Chamberlain and Summers (2020b), a solution to this would be to allow individuals below SPA to pay any tax due on their pension wealth out of their lump sum once they reach SPA. Accordingly, we assume that once an individual reaches SPA, all of their wealth is 'immediately taxable'. For individuals below the SPA, we define immediately taxable wealth as all non-pension wealth, plus the value of pensions that are already in payment, as this wealth has already been accessed.<sup>9</sup>

We define 'liquid wealth' as financial wealth, plus certain forms of pension wealth depending on whether the individual is above or below SPA. If the individual is below SPA, we assume that all of their pension wealth is illiquid.<sup>10</sup> If the individual is above SPA, we assume that any remaining wealth in a Defined Contribution pension pot becomes liquid, plus any lump sums from Defined Benefit pensions that have not yet been claimed. However, wealth arising from the discounted stream of income from a Defined Benefit or annuitised pension pot, or any other form of regular pension income, is assumed to be illiquid.<sup>11</sup> In practice, it is difficult to distinguish between liquid and illiquid forms of wealth. We expect some of our assumptions to classify too much pension wealth as illiquid, but that our classification of all financial wealth as liquid will have the opposite effect. It is not clear whether the net effect is positive or negative.

Of the annual tax structures raising £10 billion in revenue, a flat tax starting at £1 million generates the largest number of liquidity constrained taxpayers, with over 48,000 taxpayers facing liquidity issues (Fig. 7). Generally speaking, the lower the threshold, the lower the share of taxpayers who are liquidity constrained. A flat tax starting at £250,000 generates 32,000 liquidity constrained taxpayers, representing just 0.2% of taxpayers (Fig. 8). By contrast, though the number of liquidity constrained taxpayers is much lower for a tax starting at £5 million, at 17,000, this accounts for 20.3% of all taxpayers at this threshold. Note that for each tax

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<sup>9</sup> A 'pension in payment' is one from which an individual is receiving a regular income stream. It is possible that there will be some individuals below SPA who have already accessed their pension pot, but are not receiving a regular income from their pension. We expect this wealth to be immediately taxable, but are unable to include these pensions in our definition of immediately taxable wealth due to data limitations.

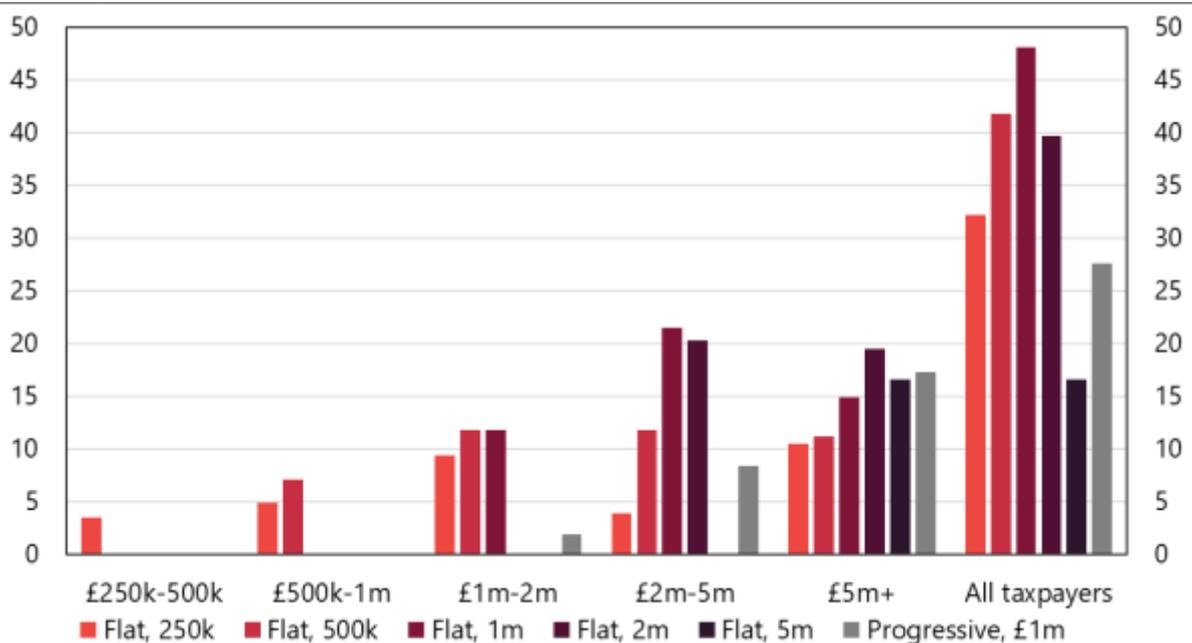
<sup>10</sup> It is possible that for individuals deriving a regular income from a pension, some of this wealth is in fact liquid. This will not be the case for Defined Benefit payments or income from an annuity, but may be the case if the income is being received through a flexible drawdown arrangement. It is not possible for us to separate these income streams in order to classify them separately as liquid or illiquid, and so we treat all pension in payment as illiquid. This applies to individuals both above and below SPA.

<sup>11</sup> This includes Additional Voluntary Contribution pots that are part of Defined Benefit or hybrid schemes. It also includes both personal and occupational pensions.

structure, we are adjusting the tax rates to target £10 billion in revenue. Therefore, the higher the threshold, the higher the marginal tax rate faced by individuals at the top. If we did not adjust the rates, then raising the threshold would reduce the number of liquidity constrained taxpayers, but this would also reduce revenue.

Under an annual wealth tax generating £10 billion before admin costs, the majority of liquidity constrained taxpayers have a business as their main asset (Fig. 9). The lower the threshold, the more evenly spread the composition of assets among those who are liquidity constrained. At a threshold of £250,000, 14% of liquidity constrained taxpayers have their main residence as their main asset. As the threshold rises to £1 million, this percentage falls to 4%. At higher thresholds, business assets become much more important among those who are liquidity constrained. At a threshold of £500,000, 57% have a business asset as their main asset. With a threshold of £5 million, 94% have a business as their main asset.

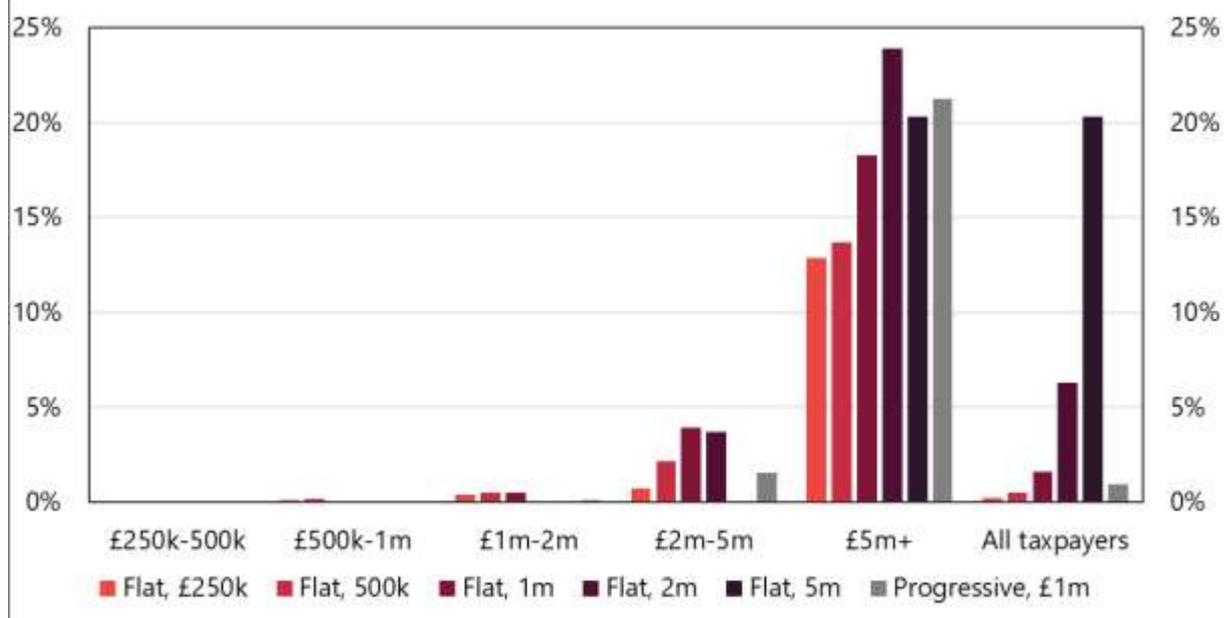
**FIGURE 7: NUMBER OF TAXPAYERS ('000) LIQUIDITY CONSTRAINED UNDER TAXES RAISING £10BN IN REVENUE, BY RANGE OF NET WEALTH**



Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 1. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes. The numbers underlying this graph are provided in Appendix C.

Source: ONS, Wealth and Assets Survey, 2016-18.

**FIGURE 8: PERCENTAGE OF TAXPAYERS LIQUIDITY CONSTRAINED UNDER TAXES RAISING £10BN IN REVENUE, BY RANGE OF NET WEALTH**



Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 1. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes. The numbers underlying this graph are provided in Appendix C.

Source: ONS, Wealth and Assets Survey, 2016–18.

**FIGURE 9: MAIN ASSET AMONG THOSE WHO ARE LIQUIDITY CONSTRAINED UNDER DIFFERENT ANNUAL TAX STRUCTURES GENERATING £10BN IN REVENUE**



Notes: An individual's main asset is the largest asset in their wealth portfolio after the exemption of low-value items (see Section 2.1 for details). Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

## 3.5 Banding

Daly, Hughson and Loutzenhiser (2021) discuss in detail the challenges of establishing the exact value of a person's total wealth at a given point in time—a difficult exercise which is nonetheless necessary for all taxpayers captured in the flat (or progressive) tax regimes described above. One way to address this problem is to use a regime of tax bands, within each of which the tax charge is a fixed fee: this will obviate the need for exact valuations of wealth for many taxpayers.<sup>12</sup> In this section we discuss how revenue raised changes if using a banded regime rather than one of the flat tax regimes as discussed above.

Hughson (2020) addresses many of the issues and challenges in using such a regime as an alternative to a flat or progressive tax as described above. A key insight from this work is that a banding scheme is a blunt instrument which generates inequity: in a band covering wealth of £1–£2 million, someone with £1 million in wealth pays the same amount in tax as someone with almost twice as much wealth, and (perhaps substantially) more than someone with just under £1 million. There is a tension between limiting the extent of this inequity by setting bands narrow enough to effectively target wealth, and setting them wide enough to materially simplify the reporting burden of a significant proportion of taxpayers.

We demonstrate an example banding scheme with bands of increasing widths of total wealth: £500,000–£1 million, £1–2 million, £2–4 million, £4–8 million, £8–16 million, £16–32 million, and £32 million and over. We set the charge within bands based on the midpoint of the band (multiplied by a rate of 0.17%, for comparability with a flat tax starting at £500,000).<sup>13</sup> The charge for the (open-ended) top of the band is set with reference to 150% of the threshold.

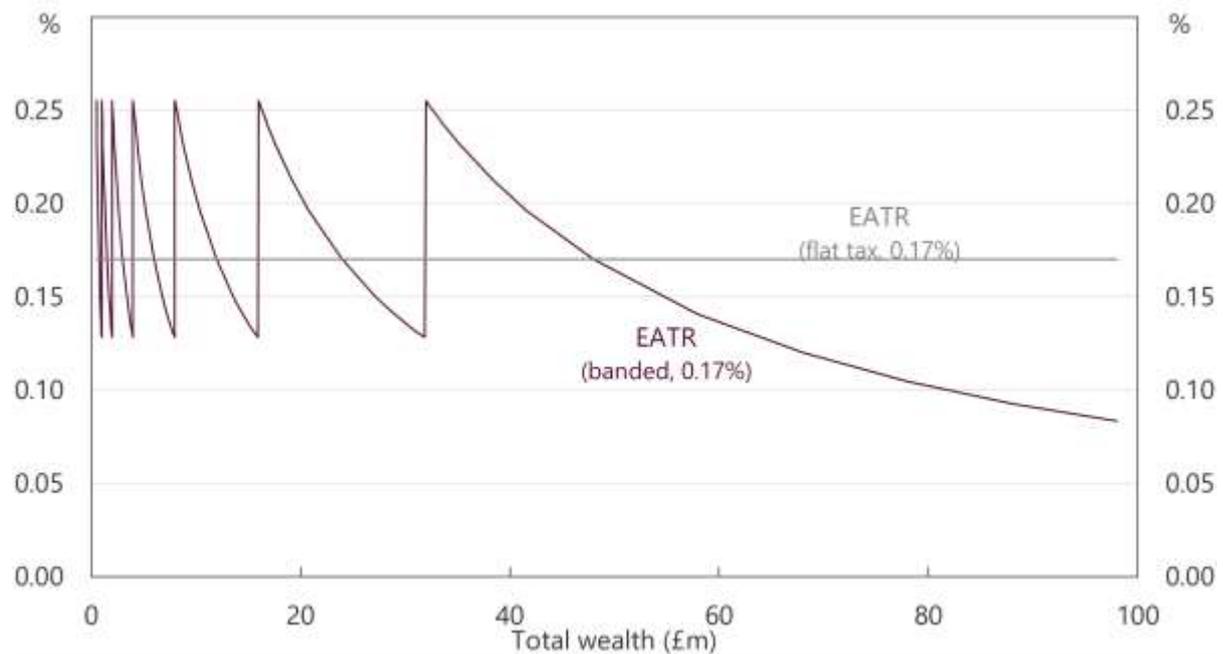
Figure 10 demonstrates what such a scheme would imply in terms of the effective average tax rate (EATR) paid – that is, the relevant banding charge divided by an individual's total wealth. The amount of tax paid under the banded regime is equal to the flat tax (only) at the midpoint of each band, and the band thresholds are clearly traced out at the points the EATRs jump higher. The vertical inequality created is clear: those at the bottom of each band pay a larger share of their wealth in tax than people at the top. The long tail at the right-hand side of the graph demonstrates a difficulty plaguing any banding regime: because the wealth distribution has such a long, thin tail, it is difficult to design a set of thresholds in which the very wealthiest members of society pay anything other than a tiny proportion of their total wealth in tax (especially as compared to others at the bottom of the same band, who may pay extremely high rates).

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<sup>12</sup> The current Annual Tax on Enveloped Dwellings (ATED) regime functions in a similar way, although it is only applied to one asset class (property).

<sup>13</sup> Hughson (2020) discusses in some detail the issues involved in the choice of the tax charge within each band. A charge based on median wealth in the band would imply lower tax rates throughout and revenues closer to the equivalent flat tax regime, but is more difficult to justify for wider and wider bands, as well as being harder to implement in practice.

**FIGURE 10: EFFECTIVE TAX RATES IN A BANDED REGIME**

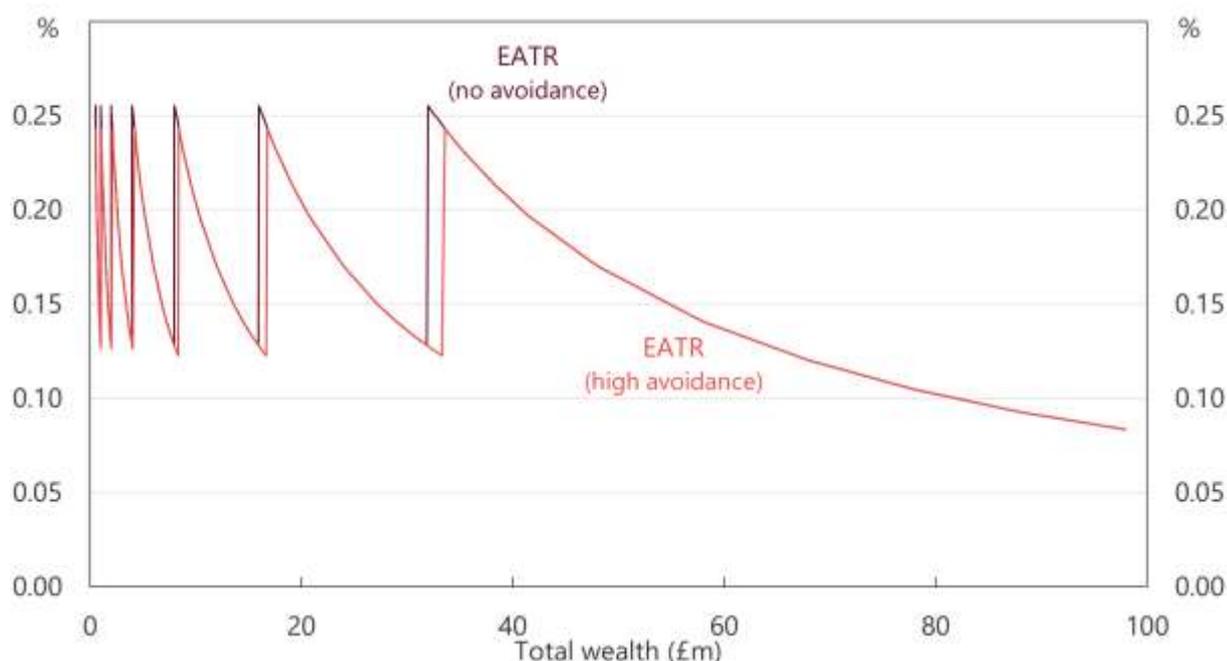


Notes: Tax liability calculated with reference to the mid-point of the relevant band (£48m for top band); EATR is calculated dividing tax liability by total marketable wealth.  
 Source: Authors' calculations.

The interaction between a banded regime and avoidance is also an important consideration. Relative to a flat or even a progressive tax regime, a banded regime creates considerably stronger incentives for avoidance for those at the bottom of each band, who have only to reduce their reported wealth by enough to fall into the lower band in order to significantly decrease their tax liability. As noted in Section 3.1, by modelling an average avoidance response, we miss the heterogeneity in responses which is likely here: the incentives for avoidance are sharpened around band thresholds and dulled elsewhere.

Figure 11 demonstrates the interaction between avoidance behaviour and a banding regime: the dark line repeats the line from Figure 10 above, showing what the EATR paid should be, with no avoidance. In our modelling, avoidance takes a very particular shape: everyone reduces their reported wealth; but with bands this only changes the tax liability of those close enough to the bottom of each band to fall into the lower tax band, while most others remain in the same band, so their tax liability is not affected. The result is that those who should be at the bottom of each band pay a lower EATR than those with slightly less wealth just the other side of the threshold. Because avoidance behaviour is being applied equally to all taxpayers and ignores heterogeneous responses, which in reality would probably see avoidance more focused around the band thresholds, the approach we have taken is likely to underestimate the overall impact of avoidance.

**FIGURE 11: EFFECTIVE TAX RATES AND AVOIDANCE UNDER A BANDING SCHEME**



Notes: Tax liability calculated with reference to the mid-point of the relevant band (£48m for top band); EATR is calculated dividing tax liability by total marketable wealth. Avoidance calculated as elasticity of 17 applied to the no-avoidance EATR.  
Source: Authors' calculations.

The impact of banding on revenue collected is notable. We compare the £9.8–10 billion raised by a 0.17% flat tax above £500,000 with revenue that would be raised by the banded regime explored above (which has relatively low, dense bands), and with another possible banded regime, with fewer bands but extending much further up the wealth distribution: £500,000–£2 million, £2–5 million, £5–20 million, £20–50 million, £50–200 million, and £200 million and over. The former regime could be conceived of as an attempt to more evenly split numbers of individuals, while the latter will do a better job of ensuring that tax liabilities track wealth more closely at the very top.

Table 3 provides a summary of estimated revenues using the two schemes, under the two avoidance scenarios outlined in Section 3.1. Unsurprisingly, more revenue is collected under a low avoidance than under a high avoidance scenario. However, consistently across either banding regime and either avoidance scenario, the revenue collected exceeds that under a flat tax. This results from a combination of the pattern demonstrated in Figure 10, where as a result of the banding scheme people at the bottom of each band are paying more than they would under an *ad valorem* scheme while those at the top pay less, and the positively skewed distribution of wealth, which means that there are many more people at the bottom of each band than there are at the top. The difference between the two banding schemes under either avoidance scenario highlights how sensitive revenues may be to the exact design of such a scheme.

**TABLE 3: AMOUNT OF REVENUE RAISED UNDER 0.17% TAX AND £500,000 THRESHOLDS**

Tax structure	Rate(s)	Revenue (£bn)	Taxpayers ('000)
Low avoidance			

Flat	0.17% (flat tax)	10.0	8,240
Banded: low bands	0.17% (applied to midpoint)	17.2	8,069
Banded: wide bands	0.17% (applied to midpoint)	21.5	7,957
<b>High avoidance</b>			
Flat	0.17% (flat tax)	9.8	8,240
Banded: low bands	0.17% (applied to midpoint)	16.5	7,845
Banded: wide bands	0.17% (applied to midpoint)	20.4	7,589

Source: Authors' calculations using ONS, Wealth and Assets Survey, 2016–18.

## 4. Modelling a one-off wealth tax

### 4.1 Approach

As with an annual wealth tax, we use data from the WAS and the STRL on the amount of wealth above various thresholds to calculate the revenue that could be raised from a one-off wealth tax. Our approach is broadly similar to the one described in Section 3.1. The key difference between an annual and a one-off wealth tax is the behavioural response. We assume that a one-off wealth tax would be based on a predetermined date, providing no scope for real responses which reduce an individual's tax liability.

The kind of avoidance responses we allow for in our analysis of an annual wealth tax do not apply in this setting. However, we may still worry about non-compliance and genuine errors. Though individuals cannot reduce their liability by, for example, giving away some of their wealth, they could choose not to report it on their tax return, or unintentionally omit it. Troup, Barnett and Bullock (2020) estimate that 10% of the revenue from a wealth tax would be lost due to some combination of non-compliance and errors in this scenario. The approach we adopt for a one-off wealth tax is to calculate the revenue raised based on wealth as it is reported in the WAS/STRL. We then reduce the resulting revenue estimate by 10% to reflect the likely tax gap.

A one-off wealth tax is assumed to generate the same admin costs as an annual tax. The main difference is that, whereas for an annual tax it is the ongoing costs which inform the net revenue that would be raised going forwards, for a one-off tax there is no distinction between a one-off and an ongoing admin cost, as the latter are only incurred once.

There is no reason to assume that a one-off wealth tax would have to be paid in a single instalment, indeed this would be unrealistic. In the subsequent analysis, we often report the annualised rate of tax that individuals effectively pay, if payment was allowed over a five-year period. For example, an individual facing a flat tax at a rate of 5% would pay 1% per year over five years.

### 4.2 Revenue

In this section, we present the amount of revenue that would be raised by a flat tax charging 5% on wealth above various thresholds. We also show the combinations of rates and thresholds that would be required to generate £250 billion from a one-off wealth tax, before admin costs. This is effectively equivalent to raising £10 billion per year over a 25-year period.

A tax rate of 5% would generate a substantial amount of revenue if charged on wealth above a relatively low threshold – £391 billion with a threshold of £250,000. The higher the threshold, the less revenue can be raised from a 5% tax. If only wealth above £10 million were charged, this would raise £44 billion.

If the government wished to raise around £250 billion with a one-off wealth tax, it could do so with a relatively high threshold of £1 million, but this would imply taxing wealth above the threshold at a rate of 8.5% (annualised rate of 1.7%) (Table 4). This tax structure would imply admin costs to the government amounting to 0.4% of revenue raised. The cost to taxpayers

exceeds this, amounting to 1.8% of revenue raised, effectively adding a further 0.14% to the headline rate.<sup>14</sup>

At lower thresholds, lower rates would be possible. Note, however, that raising £50 billion a year requires much higher rates than for the earlier annual wealth tax targeting £10 billion. This will have implications for the number and composition of those facing liquidity constraints under a one-off wealth tax, as discussed in Section 4.4.

**TABLE 4: REVENUE ESTIMATES FOR A ONE-OFF TAX – FLAT AND PROGRESSIVE TAXES**

Threshold (£)	Annualised rate	Revenue (£bn)	Taxpayers ('000)	Administrative cost (£bn):		Share of revenue from STRL
				to taxpayer	to govt	
<b>Flat tax at 5%</b>						
10,000,000	1%	44	22	0.7	0.6	50%
5,000,000	1%	53	83	1.4	0.6	40%
2,000,000	1%	82	631	2.5	0.7	25%
1,000,000	1%	147	3,035	4.6	1.0	14%
500,000	1%	263	8,240	7.8	1.7	8%
250,000	1%	391	15,537	10.7	2.7	5%
<b>Flat tax raising £250bn</b>						
1,000,000	1.7%	250	3,035	4.6	1.0	14%
500,000	1.0%	250	8,240	7.8	1.7	8%
250,000	0.6%	250	15,537	10.7	2.7	5%
<b>Progressive taxes raising £250bn</b>						
1,000,000	0.8%					
2,000,000	1.6%					
5,000,000	2.4%	252	3,035	4.6	1.0	25%
10,000,000	3.0%					
500,000	0.6%					
1,000,000	1.0%					
2,000,000	1.2%	253	8,240	7.8	1.7	13%
5,000,000	1.4%					
10,000,000	1.6%					

Notes: These revenue estimates account for 10% of tax revenue being lost to non-compliance.

Source: ONS, Wealth and Assets Survey, 2016-18; Sunday Times Rich List, 2020; Burgherr, 2021; Daly, Hughson, and Loutzenhiser, 2021; House of Commons Library Research Paper, 2005; HMRC Government Major Project Portfolio data, 2020d.

Even under a progressive tax, raising the threshold does not necessarily mean that taxpayers higher up the wealth distribution pay less (Table 5). Under a one-off tax generating £250 billion with a £1 million exemption threshold, a taxpayer with £7.5 million in net wealth pays £116,000. By lowering the threshold to £500,000 while maintaining the same revenue target, the same individual will pay £84,000. Revenue is maintained by increasing the amount of revenue from taxpayers lower down the wealth distribution.

<sup>14</sup> Admin costs as a share of tax revenue are calculated using revenue estimates which account for evasion. To convert admin costs to taxpayers into an effective headline tax rate, we divide aggregate admin costs by aggregate taxable wealth, before accounting for evasion.

**TABLE 5: AMOUNT OF TAX PAID BY A REPRESENTATIVE INDIVIDUAL UNDER A ONE-OFF TAX WITH DIFFERENT THRESHOLDS (£)**

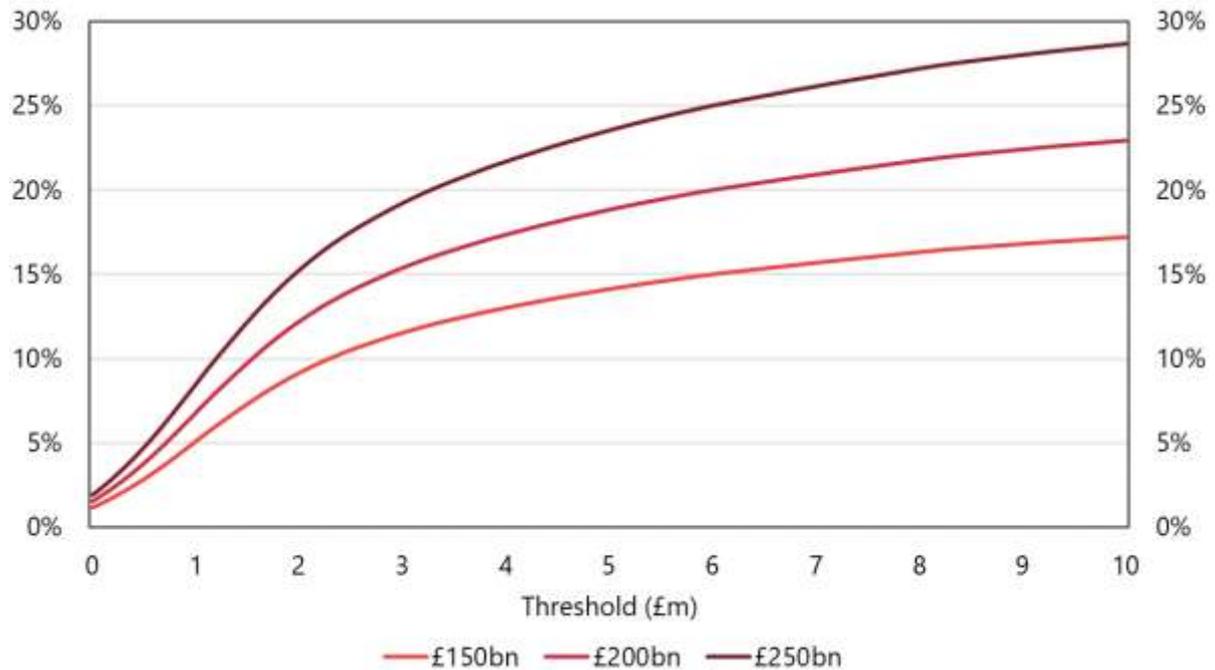
Threshold (£)	Annualised rate	Individual net wealth (£)				
		750,000	1,500,000	3,000,000	7,500,000	15,000,000
<b>Progressive taxes generating £250bn</b>						
500,000	0%					
1,000,000	0.80%					
2,000,000	1.60%		4,000	24,000	116,000	326,000
5,000,000	2.40%					
10,000,000	3.00%					
500,000	0.60%					
1,000,000	1.00%					
2,000,000	1.20%	1,500	8,000	25,000	84,000	199,000
5,000,000	1.40%					
10,000,000	1.60%					
500,000	0.95%					
1,000,000	0.95%					
2,000,000	0.95%	2,375	9,500	23,750	66,500	137,750
5,000,000	0.95%					
10,000,000	0.95%					
Number of individuals with similar wealth (within 10%), thousands		1,508	573	107	14	5

Notes: Calculations of the tax liability of individuals at different points of the wealth distribution, under each tax schedule shown in Table 4. 'Number of individuals with similar wealth' shows the number of individuals whose net wealth is within 10% of the representative individual, giving a rough indication of the number of individuals who would face that tax liability.

Source: ONS, Wealth and Assets Survey, 2016-18.

Figure 12 shows the different combinations of rates and thresholds that would be required to generate different revenue targets from a one-off wealth tax, after admin costs. Naturally, the higher the revenue target, the higher the rate needed for a given exemption threshold.

**FIGURE 12: RATES AND THRESHOLDS GENERATING DIFFERENT REVENUE TARGETS FROM A ONE-OFF WEALTH TAX, AFTER ADMIN COSTS**



Notes: Tax rates are those required to generate the revenue target after admin costs are taken into account. We assume that 10% of tax revenue is lost to non-compliance.

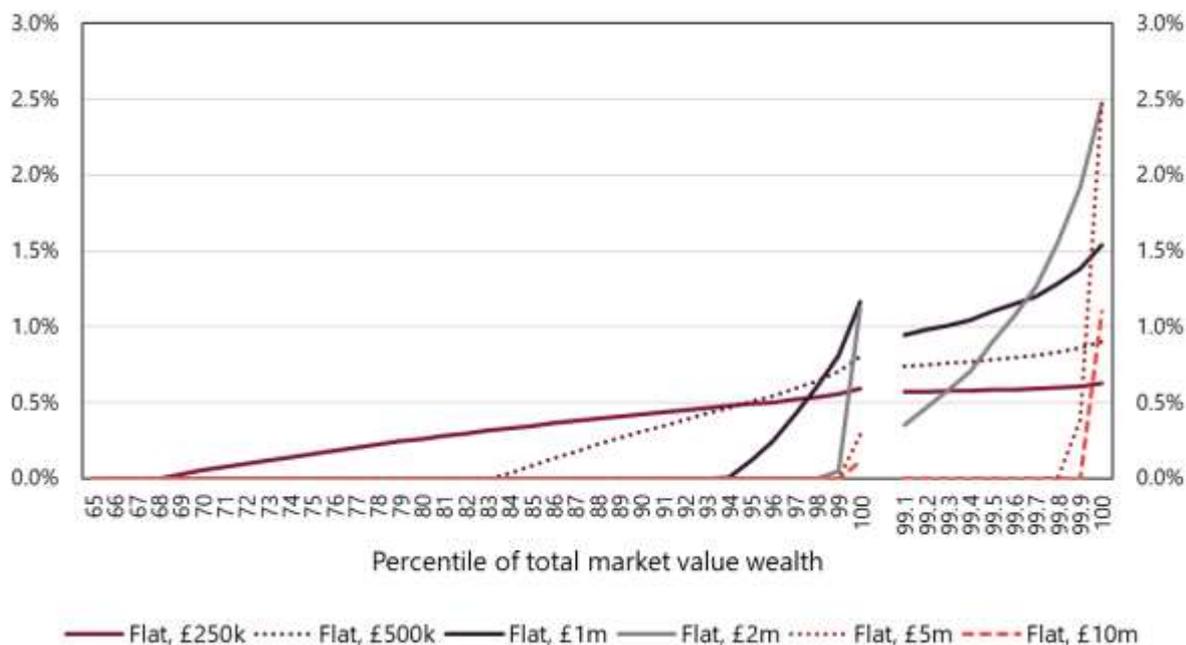
Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

### 4.3 Distributional Effects

Given that taxpayer status depends only on having wealth above the tax threshold, and not on the frequency of the tax or rates charged, much of the analysis presented in Section 3.3 also applies in the context of a one-off wealth tax. What will differ is the *amounts* of tax paid by different taxpayers.

In Section 3.3, we showed how the share of wealth taxpayers varies across the income distribution for a given threshold. This is the same for a one-off tax, since it does not depend on the tax rate charged. Figure 13 illustrates how the annualised average tax rate under a one-off tax varies across the wealth distribution. The annualised rates are noticeably higher than for an annual wealth tax. The average tax rate paid by someone in the top 1% is 0.8% in each of the 5 years, compared to 0.15% under an annual wealth tax generating £10 billion in revenue with a threshold of £500,000. In Appendix A, we show how the average tax rate varies by total wealth, rather than by percentile. Here, it is evident that as wealth increases, the average tax rate gradually converges to the headline marginal rate.

**FIGURE 13: MEAN AVERAGE (ANNUALISED) TAX RATE BY PERCENTILE UNDER DIFFERENT ONE-OFF TAX STRUCTURES**



Notes: All adult individuals are ranked according to their total wealth measured at market value, and grouped into percentiles. For each tax structure, the tax rates are adjusted to target £250 billion in revenue, before admin costs, as per Table 4. The annualised average tax rate faced by individual is the amount they *should* pay in each year of the five-year payment period, and does not take behavioural responses into account. We take the democratic mean of average tax rates faced in each percentile. Appendix A shows the average tax rate by total chargeable wealth. Source: ONS, Wealth and Assets Survey, 2016–18; Sunday Times Rich List, 2020.

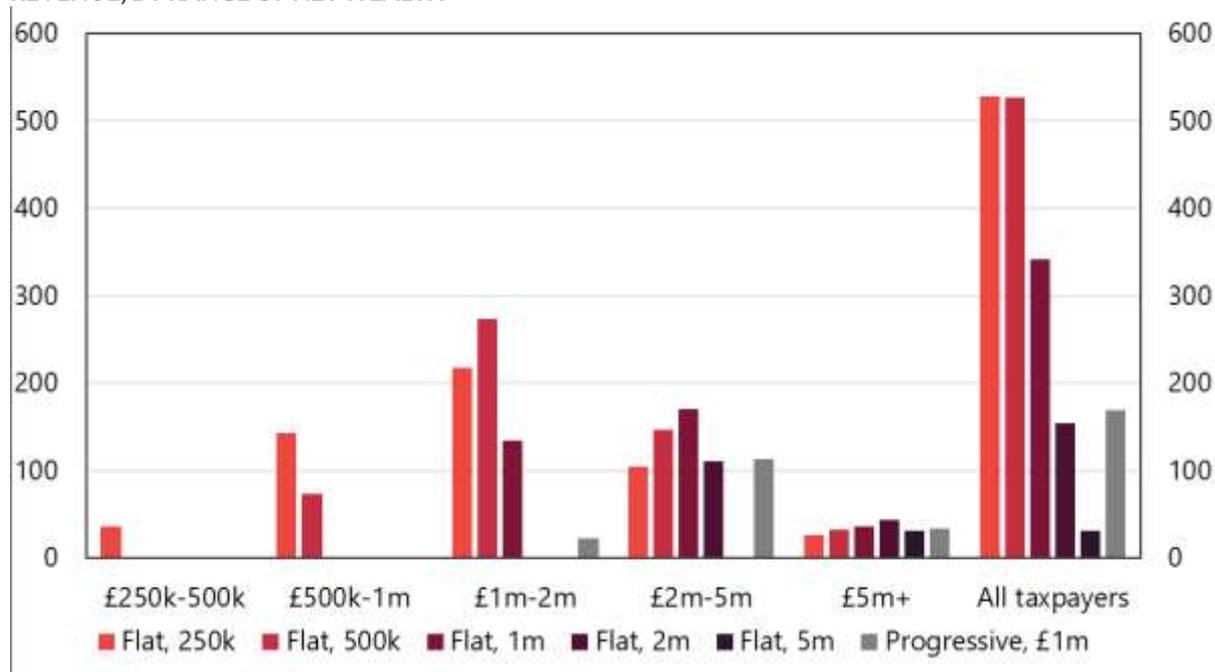
## 4.4 Liquidity Issues

The tax rates required to raise £250 billion in tax revenue from a one-off wealth tax – effectively £10 billion per year over a 25-year period – are clearly higher than the rates required to generate £10 billion from an annual wealth tax. Under a flat tax starting at £500,000, taxpayers would face a tax rate of 4.8% under a one-off tax, or 0.95% per year over a five-year payment period. By contrast, the same individual would have to pay 0.17% per year under an annual wealth tax. As a result, the number of taxpayers who are liquidity constrained under a one-off wealth tax will far exceed the number constrained under an annual tax.

Figure 14 shows the number of taxpayers that would be liquidity constrained under a wealth tax generating £250 billion with a five-year payment period. An individual is liquidity constrained if the amount of tax they have to pay *in the first of the five years* exceeds 20% of their net income, and 10% of their net income plus liquid wealth (see Section 3.4 for details).<sup>15</sup> In this setting, a flat tax starting at £250,000 generates the greatest number of liquidity constrained taxpayers, at 528,000 (3.4%). Less than 10% of these individuals would be liquidity constrained under an annual flat tax generating £10 billion. As a percentage of the number of taxpayers, a flat tax starting at £5 million produces the highest share facing liquidity constraints, at 38%.

<sup>15</sup> In Appendix C, we illustrate the extent of liquidity issues using alternative cutoffs to define when an individual is considered liquidity constrained.

**FIGURE 14: NUMBER OF TAXPAYERS LIQUIDITY CONSTRAINED UNDER TAXES RAISING £250BN IN REVENUE, BY RANGE OF NET WEALTH**

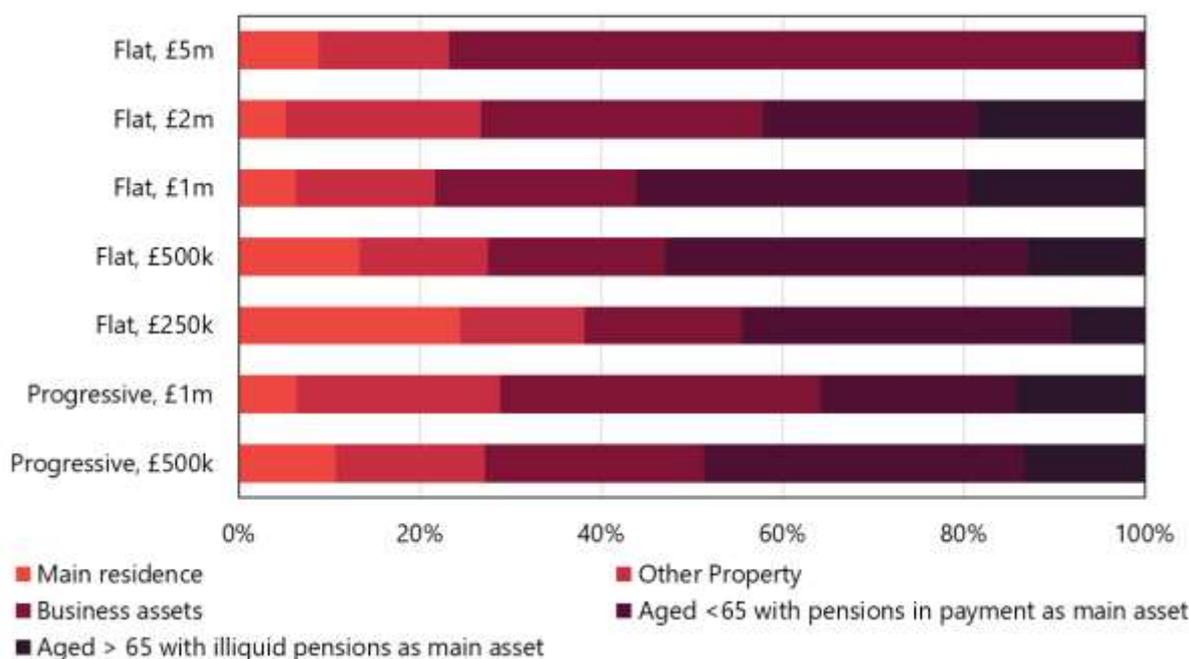


Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 4, where we target £250bn in revenue under each tax structure. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5m due to small sample sizes. The numbers underlying this graph are provided in Appendix C.

Source: ONS, Wealth and Assets Survey, 2016–18.

The composition of main assets among those who are liquidity constrained under a one-off wealth tax is markedly different than for an annual wealth tax generating £10 billion in revenue (Section 3.4), as many more taxpayers are liquidity constrained under a one-off tax generating £250 billion in revenue. Business assets still feature prominently as a main asset among those constrained, and are the most common main asset among those constrained by a tax with an exemption threshold of at least £2 million. However, pension assets are a much more common main asset among the liquidity constrained than under an annual tax. With a flat tax starting at £500,000, 53% of those who are liquidity constrained have illiquid pension wealth as their main asset. For those over State Pension Age, this consists of annuitised and Defined Benefit pensions, which are illiquid. For those below State Pension Age, this consists of pensions already providing a regular income stream, on which they are expected to pay a wealth tax immediately as the pension has already been accessed.

**FIGURE 15: MAIN ASSET AMONG THOSE WHO ARE LIQUIDITY CONSTRAINED UNDER DIFFERENT ONE-OFF TAX STRUCTURES GENERATING £250BN IN REVENUE**



Notes: An individual's main asset is the largest asset in their wealth portfolio after the exemption of low-value items (see Section 2.1 for details). Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values. We do not present liquidity analysis using thresholds above £5m due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

## 4.5 Banding

As discussed in Section 3.5 above, a tax regime which utilises tax bands can alleviate the valuation challenges for taxpayers, but this can have a large impact on revenue: even with relatively tight bands, the revenue collected tends to be higher than that under a flat tax equivalent, because the bulk of taxpayers pay more.

Banding also has a marked impact on revenue in the context of a one-off wealth tax. Even if we assume the same response from taxpayers (i.e. reducing wealth above the threshold by 10% to reflect non-compliance) as in a one-off flat or progressive tax, the estimated revenue raised is over £460 billion rather than £250 billion under a flat tax.<sup>16</sup> It is worthwhile explicitly pointing out that, in this context, more revenue is not necessarily better: here the additional revenue comes from the distortion caused by the banded system, leading to many individuals paying far higher tax rates than they would under an *ad valorem* tax. The costs of valuation would need to be extremely high in this scenario to justify such a substantial distortion.

This could be attenuated to some extent by basing the band charge on a point lower in the band. For example, basing the charge on the value a quarter of the way into the band (as opposed to the halfway point, the midpoint) reduces the estimated revenue collected to around £390bn.

That said, our modelling of avoidance behaviour in this scenario is quite mechanical, assuming that all taxpayers respond in the same way, by reducing their reported wealth by 10%. Some taxpayers fall into a lower band as a result, but for most, their payment will remain the same.

<sup>16</sup> This estimate is based on the tightly-banded scheme outlined earlier, with thresholds at £500,000, £1m, £2m, £4m, £8m, £16m, and £32m.

Clearly, this is unrealistic, as those whose wealth is close to a band lower boundary have stronger incentives to respond than those higher up in the band. On net, though, this will only partly work against the effect of the high EATRs being paid by individuals at the bottom of each band, and will not remove the large variation in EATRs across individuals.

While it may be desirable to introduce a banding scheme as a response to the difficulty of valuing wealth precisely, the invariable result is that some individuals will pay much higher taxes than they would under an equivalent flat tax. It is only possible to avoid large distortions in the tax burden by having very tight bands. Hughson (2020) shows that the trade-off for this choice is the better valuation accuracy needed to avoid large numbers of individuals accidentally misclassifying their wealth. In the case of a one-off wealth tax as described above, this might not be unreasonable given the recommended design implies performing high quality valuation across most of the tax base.

## 5. Alternative reforms to capital taxes

To get a sense of scale for wealth tax revenues, it is helpful to consider the effects of alternative reforms that have been proposed. In this section, we provide some evidence on the amount of revenue that could be raised from alternative reforms to capital taxes, namely Capital Gains Tax (CGT), taxation on dividends, Inheritance Tax (IHT) and Council Tax.

### 5.1 Capital Gains Tax

The current CGT regime raised £8.8 billion in 2019–20 (HMRC, 2020b), but recent estimates suggest the amount raised could be almost tripled by equalising the tax rates charged on capital gains with that charged on income. Capital gains are afforded a significant tax discount compared to earned income which incentivises those who can to take remuneration as gains instead of income, meaning that the taxation system does not redistribute remuneration from gains nearly as effectively as it does remuneration from income.

Advani and Summers (2020) show that, by taking advantage of the preferential tax rates afforded on capital gains, many of the highest-income earners pay lower rates of tax than those on below-average incomes. If everyone with total income and gains over £100,000 paid the headline average tax rates on earnings, this would raise a further £12 billion. The Office of Tax Simplification (OTS), in their review of CGT, suggested that the same reform could raise around £14 billion (OTS, 2020).

A second substantial reform would be the removal of ‘death uplift’. Currently, any accrued capital gains are written off on death. The estate of the individual who dies does not have to pay CGT. The inheritor is treated as having a ‘base cost’ (original value of asset against which gain is calculated) equal to the value of the asset when they receive it, so when they sell they only pay tax on the gains that occur after receipt. This creates strong incentives to delay realising gains, so that the gains can be written off.

The OTS review of CGT proposes moving to a ‘no-gain no-loss’ basis. Here the estate of the individual continues not to have to pay the CGT<sup>17</sup>, but the inheritor now receives the asset at the base cost of the previous owner. No CGT is now written off: instead the CGT owed by the deceased is paid by the inheritor when the inheritors sells (or otherwise ‘disposes of’) the asset. The OTS estimates that this reform will raise only £470–900 million in additional tax revenue in the short term.

The relatively modest sum raised here – at 5–10% the current CGT revenue – is because many of the assets passed on will continue not to be sold for some time. The proposed reform also retains some lock-in effect for two reasons. First, for inheritors CGT would have to be paid on the assets when sold, while the full value is otherwise available to borrow against – this is already a problem for the original owner, but the magnitude increases over time. Second, in the absence of new reliefs, it discourages *inter vivos* gift-giving (which would still require payment of CGT).

A better alternative would be to raise the money when assets are transferred, by treating this as a disposal. No-gain no-loss benefits those who have enough wealth that some assets can continue to be passed through multiple generations without ever being sold. In principle the same revenue will eventually be owed. However, there is a risk that the tax owed on some of

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<sup>17</sup> There are some complexities in how this is structured, including the implications for IHT, which we do not describe here. For full details see OTS (2020).

these gains gets wiped out by calls for ‘rebasings’ – essentially forgiveness of tax owed before some date. Such a proposal made its way in to the OTS review of CGT, on the basis that base costs for some assets cannot be found.<sup>18</sup>

Moving to a disposal treatment at death is likely to raise £1.6 billion a year, almost 20% of the current CGT revenue, and would increase proportionally with the tax rate, on a static calculation (*inter alia*, OTS (2020), showing the long term equilibrium effects of removing uplift at death).

Removing uplift at death in favour of either of these alternatives would create some administrative cost. Although the estate must be valued on death anyway, base costs would now also be needed for assets. Assuming all assets are hard to value, and using the estimate from Burgherr (2021) that a central estimate of valuation costs is 0.5% of the total value of the asset, this would cost an additional £80 million per year.

## 5.2 Income Tax rate on dividends

As noted in Section 5.1, income from different sources is taxed differently, and individuals who can arrange their income in different forms can reap substantial tax benefits. For example, many individuals at the top of the income distribution receive substantial dividend income (and can also claim additional personal allowances on this income), which reduces their tax bill compared to receiving the same amount as earned income.

We consider the effect of raising the dividend rate such that it is equal to the income tax rate paid on earnings by individuals. As a very rough exercise, we use data from the Survey of Personal Incomes (SPI) in 2016-17, and estimate the additional tax revenue which would be raised if dividends were taxed at the same average tax rate as recipients pay on the rest of their income and the additional personal allowance removed.<sup>19</sup> The estimated effect of this reform would be to raise just over £5bn.<sup>20</sup> Again, we note these are static estimates, and we caution that a more sophisticated analysis taking account of behavioural responses may suggest a lower amount of revenue raised. On the other hand, these calculations do not include employee National Insurance contributions which are currently due on employment income (but not on dividends); including these would result in a larger amount of revenue.

We use statutory incidence in constructing these estimates, so taxes paid by firms, including Corporation Tax and employer National Insurance Contributions, are not accounted for. Advani and Summers (2020) show that the opposite extreme – assuming full incidence of these taxes on employees – increases the overall level of tax paid, but does not change the incidence across the income distribution.

With no information on wealth available in the SPI it is difficult to comment on the distributional impact of such a change with reference to wealth. However, in terms of income, the effect of the change would be most notable for additional rate taxpayers with dividend income, who would

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<sup>18</sup> Given the work done by the Wealth Tax Commission to study valuation issues, we think that difficulty getting past asset values is unlikely to be a serious concern. Nevertheless it appears to be a politically salient issue, that has led to a proposal that base values be rebased to a value in the year 2000 (OTS, 2020). We do not see any merit in such a recommendation, but were it implemented it would clearly affect the revenue that would be raised in the short term.

<sup>19</sup> The dividend allowance was £5000 in 2016-17 but has since been reduced to £2000.

<sup>20</sup> Comparable figures are found in Nanda (2019), who estimates that equalising tax on dividends with tax on earnings would raise £6.8bn in 2020-21 (static estimate), or £6bn after allowing for behavioural responses.

pay an average of £3900 extra per year in tax, followed by higher rate taxpayers (£1490 per year) and then basic rate (£475 per year).

## 5.3 Inheritance Tax

Inheritance Tax (IHT) is a tax on wealth passing on death. The current tax base is far from comprehensive. Pension wealth is exempt from IHT, and reliefs are given on business assets (BPR) and agricultural property (APR). The exclusion of these assets from the tax base makes it easy for individuals who are flexible in how they hold their wealth to avoid the tax. Regarding pensions, the current system creates an unusual incentive for individuals to draw down all *other* wealth in order to pass on their pension pot tax-free to the next generation. This is particularly anomalous since pension savings already receive significant tax advantages when saving is being done.

The tax is, in principle, levied on wealth in excess of £325,000, though exemptions also apply, notably for estates passing to a surviving spouse.<sup>21</sup> The exemption threshold (nil rate band) each estate faces in practice depends on what assets it contains and who they are passing on to, as certain assets such as the main residence qualify for a higher exemption threshold if they are passed on to the direct descendants of the deceased. It also depends on whether or not the estate had been inherited from a spouse who did not use up their own nil rate band, as any excess can be transferred to the surviving spouse.

In sum, the multitude of exemptions and reliefs make the current IHT system complex, and the tax easy for wealthy and well-advised individuals to avoid. This is evidenced by the fact that the effective average tax rate declines from 20% among estates worth more than £8–9 million to 10% for estates worth more than £10 million (OTS, 2018).

Numerous reforms to the existing tax system have been proposed. In this paper, we focus on two: the removal of APR and BPR, and the inclusion of pensions in the tax base.<sup>22</sup> We calculate the amount of revenue that could be raised from these reforms using data from the WAS for 2016–18, comparing this to official estimates of the charges levied on estates passing on death in 2017–18, which totalled £4.8 billion.<sup>23</sup>

### Approach

The WAS represents a snapshot of the wealth held by the living population, rather than the population of estates passing on death. To model the value of estates passing on death, we apply age-sex specific mortality rates to individual survey weights in the WAS. That is, within each age-sex cell, we scale the weights of individuals in that cell to match the number of deaths among that group recorded in the ONS' official UK death statistics for 2018. The aim of this exercise is to produce a sample which is representative of those who would die in the year following the survey. The resulting sample is not fully representative, since we do not adjust mortality rates to reflect the fact that wealthier individuals are likely to live longer than other individuals of the same age and sex.

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<sup>21</sup> Charitable donations are also exempt.

<sup>22</sup> An alternative proposal, which we do not consider here is replacing IHT entirely with a lifetime gifts tax. See Corlett (2018), Roberts et al. (2018) and Dolphin (2020) for details.

<sup>23</sup> Tax due on estates passing on death in 2017-18, Inheritance Tax Statistics Table 12.2 (HMRC, 2020c).

Modelling the removal of APR and BPR can only be approximated using these survey data, and our estimates are only intended to be illustrative.<sup>24</sup> The questionnaire does not allow for the construction of wealth totals which map neatly into the eligibility criteria for these reliefs. First, agricultural business assets are combined with other businesses in the WAS, making it difficult to distinguish between the two reliefs.<sup>25</sup> Listed and unlisted shares are also combined into a single category, though they are treated differently under BPR.<sup>26</sup> We approximate this by classifying all shares owned by individuals who *only* own unlisted shares as unlisted, and all other shares as listed. We assume that the former are eligible for BPR, while the latter are not. This could lead us to overstate the revenue gains from abolishing BPR, as some shares classed as 'listed' would have already qualified for at least partial relief. On the other hand, it is possible that some business assets categorised under the 'own businesses' section of the WAS, which we assume are eligible for 100% relief, would not qualify currently.

Our revenue analysis excludes individuals from the Sunday Times Rich List. This is because though we believe their recorded wealth primarily reflects business assets, we are not confident in assigning the full value of this wealth as qualifying for 100% relief under BPR. Including this wealth in the wealth added through the removal of BPR and APR would overstate the revenue implications of this reform. We do, however, take into account the adjustment made to business wealth owned by WAS individuals through our top wealth adjustment.<sup>27</sup>

In modelling the revenue implications of taxing inherited pension wealth, we account for the fact that the value of pensions that are inherited differs from the total value of pension wealth held by an individual while they are alive. While the value of a Defined Contribution pension pot generally remains intact when it is inherited, Defined Benefit pensions and the value of pensions that have been annuitised can be worth less to the individual to whom the pension is passed on, as they do not usually receive the full amount of income paid to the original recipient. We assume that the value of a Defined Benefit pension when passed on is worth 50% of what it was worth to the original recipient. Pensions that have already been inherited from a former spouse or partner are assumed to cease when the individual who inherited them passes on.

We cannot accurately model the exemption threshold that each individual in our dataset would face, not least because we cannot identify individuals who have inherited some nil rate band from a spouse, nor do we know to whom the estate would be passed. This makes it impossible to say whether exemptions such as the residence nil rate band, which depends on the relationship between donor and donee, should apply. Regarding the spousal exemption, we can assume that all individuals who are married when they die would pass their estate to the surviving spouse, but we cannot confirm this. As a result of these limitations, the revenue model we implement will necessarily be stylised.

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<sup>24</sup> As we explain, the data we use do not directly map on to the categories available for relief. We also do not have the necessary information for the very top of the wealth distribution (which we elsewhere impute using the STRL), nor do we have information on the remaining nil rate band that a given individual has. Our revenue estimates here therefore have more uncertainty than when modelling a wealth tax. A more in-depth analysis of IHT reform is beyond the scope of this work.

<sup>25</sup> Other wealth categories in the WAS, such as property – which includes both residential property and land – may also include some assets that would qualify for APR. However, we cannot separate the assets that would meet the eligibility criteria from those that would not. To the extent this is a problem, it would cause us to overestimate the current revenue from IHT, and underestimate the value of removing APR.

<sup>26</sup> According to the eligibility criteria, unlisted shares qualify for 100% relief, while listed shares qualify 50% and only if the individual controls more than 50% of voting rights.

<sup>27</sup> We also add in the (unadjusted) wealth of survey respondents who overlapped with the STRL, which partly offsets the exclusion of top wealth individuals from the STRL.

Our approach makes use of the fact that the current IHT system taxes 4% of all estates passing on death. We take this as our target taxpaying population total, N. We then exclude individuals who are married when they die, under the assumption that these estates qualify for spousal exemption. Finally, we assume that the wealthiest N of the remaining estates are taxed, at a rate of 40% (as per the current system), on wealth in excess of the minimum wealth required to be among the taxpaying population. This final step amounts to assuming that all individuals face the same 'effective threshold', when in practice some individuals would face a higher threshold and some a lower one.

As well as calculating the revenue that could be raised from these reforms, it is important to consider their administrative cost. We will assume that the average admin cost per taxpaying estate, currently £1,450 (Burgherr, 2021), is the same when pensions are included as when they are not. While implementing the reform is likely to come at some admin cost, it is possible that this will be partially offset by the average complexity of estates brought into IHT being lower than the complexity of estates that already face the tax. Overall, we assume that these effects offset one another.

For the removal of APR and BPR, we assume that there is an admin cost to valuing businesses. Following our method for calculating taxpayer costs for a wealth tax, we assume that this is a fixed percentage of the business value reported in the WAS. We take 0.8% of business wealth – the upper bound applied for valuing hard-to-value assets under a wealth tax – for all taxpayers with business wealth in excess of £30,000, but assume that the total cost of valuing a business cannot exceed £25,000, which Burgherr (2021) suggests is the maximum cost faced in practice. This is then added to the current average cost of administering IHT per taxpayer. This is likely to be an upper bound, as the cost of valuing businesses will be partially offset by no longer having to decide whether or not a business is eligible for reliefs. In this exercise, we are assuming that the additional cost of valuing businesses is borne by HMRC. This may not be the case. If individuals are required to obtain valuations then this cost would be borne by the taxpayer instead, as a cost to the executor that would be able to be taken out of the estate.

Our main specification does not take avoidance responses into account. It is not clear how individuals would respond to these reforms, given that they shut off some of the channels that can currently be exploited to avoid IHT, such as passing wealth on through a pension pot or business. In Appendix D, we present a specification which assumes avoidance responses that are likely to be larger than we would observe in reality, for comparison. The effect of these responses on our revenue estimates is small, and does not change our interpretation of the results.

## Revenue

Our stylised approach to modelling the IHT system predicts that with the tax base that exists currently, i.e. excluding pensions and business assets, IHT ought to have raised £4.4 billion in revenue from individuals passing the year following the WAS survey. This is slightly lower than the £4.8 billion charge actually levied on individuals passing on death in 2017–18 according to the IHT statistics (HMRC, 2020f). One explanation for this shortfall is that our data under-represent wealth held at the top of the distribution. While we adjust the data for our wealth tax analysis by including the STRL and adjusting business wealth, this is not taken into account in our IHT modelling as business wealth is excluded from the tax base and we do not include the STRL. A second factor is that we do not observe lifetime gifts made in the seven years prior to death, which are also subject to IHT.

We estimate that including pension wealth in the tax base, keeping the threshold the same, could increase revenue by 41%, or £1.8 billion. We estimate an additional admin cost (as a result

of additional taxpayers needing to file) of £18 million, around 0.1% of the additional revenue. It is important to note that this, and all other estimates here, are *static* revenue estimates: they do not account for how individuals might respond. We provide some suggestive modelling of this in Appendix D.

An alternative reform which adds businesses (agricultural and other) to the current tax base, keeping the threshold the same and not changing the treatment of pensions, would increase revenue by 20%, or £900 million, at an additional cost of £5 million.

Combining the two reforms would yield 61% more revenue, and would cost £23 million more than the current system, bringing an additional 12,000 estates into IHT. In proportional terms these reforms raise substantial revenue, and at very low admin cost. They also have the benefit of not distorting choices of which assets to hold in order to reduce tax liabilities on death. However, relative to the amounts that a wealth tax could raise the revenue gains from these reforms alone are small.<sup>28</sup> Implementing these reforms would involve many of the valuation challenges faced under a wealth tax, though – importantly – for much lower volumes of taxpayers in any given year. By being paid once (at most) per individual, rather than annually, the admin costs are much lower, though the principle of needing to value additional asset classes for IHT is not changed.<sup>29</sup>

Removing APR, BPR and pensions relief would reduce distortions. Whether a government wants to then also have more taxpayers and more revenue is a political choice, rather than something which can be judged objectively. We therefore consider two further reforms.

First, we target the same number of taxpayers as the current system after including pensions and businesses. Implicitly this raises the ‘effective threshold’ needed to be a taxpayer. This reduces the revenue raised by the reform from £7.1 billion to £5.7 billion, but this is still an increase of £1.3 billion on the status quo.

Second, we estimate the rate that would be needed to raise the same amount of revenue as the ‘current’ scenario, after a reform that includes all assets in the tax base. The tax rate suggested by our model in this scenario is 25%.

**TABLE 6: REVENUE FROM REFORMING INHERITANCE TAX (ILLUSTRATIVE)**

	<b>Taxpayers ('000)</b>	<b>Effective threshold (£)</b>	<b>Rate</b>	<b>Revenue (£bn)</b>	<b>Administrative cost (£m)</b>
Current IHT tax base	25	583,400	0.40	4.4	36
adding pension wealth	37	583,400	0.40	6.2	54
adding business wealth	25	583,400	0.40	5.3	41

<sup>28</sup> Corlett (2018) estimates the revenue that could be raised from a different alternative: completely replacing IHT with a lifetime receipts tax. Under a tax structure which features a £3000 annual allowance per recipient, a £125,000 lifetime allowance, and a flat rate of 15% on lifetime gifts in excess of this, it is estimated that £6.9 billion could be raised in the first year of the tax. Over time, the amount of tax revenue would increase as some individuals who do not reach their lifetime allowance in year one receive additional gifts and inheritances.

<sup>29</sup> As Advani, Chamberlain and Summers (2020b) note, all these asset classes are already valued elsewhere in the tax system.

adding pension and business wealth	37	583,400	0.40	7.1	59
Raising the threshold	25	698,934	0.40	5.7	40
Reducing the rate	37	583,400	0.25	4.5	59

Notes: 'Current IHT tax base' shows our stylised model of the current IHT system. The 'effective threshold' is the amount of wealth required to be among the taxpaying population. The revenue calculation is the rate applied to total wealth above the effective threshold. 'Adding pension wealth' adds pensions to the current tax base, according to their inherited value, keeping the effective threshold fixed. 'Adding business wealth' adds businesses and unlisted shares to the current tax base, keeping the effective threshold fixed. 'Adding pensions and business wealth' combines the previous two reforms. 'Raising the threshold' takes the tax base as inclusive of all assets (pensions and business wealth included) and raises the threshold to maintain the same number of taxpayers as the current IHT system. 'Reducing the rate' calculates the rate required to generate the same amount of revenue as the 'current' IHT system (our model), from the same number of taxpayers, with a comprehensive tax base.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.

Table 7 illustrates how these reforms shift IHT liabilities toward the top of the wealth distribution. Taxing all wealth on death at 40%, while maintaining the same number of taxpayers by raising the threshold, reduces the average tax paid among taxpaying estates worth £650,000–£1 million by more than a third. By contrast, it increases the average tax paid by taxpaying estates by 9% for those worth £2–5 million and 13% for those worth more than £5 million.

**TABLE 7: TAX DUE UNDER A REFORMED IHT, BY RANGE OF TOTAL WEALTH ON DEATH**

<b>Total wealth on death</b>		<b>Current tax base</b>	<b>Reformed, old threshold</b>	<b>Reformed, raised threshold</b>	<b>Reformed, raised threshold, lowered rate</b>
£650-1m	Average tax due among taxpayers (£)	40,233	132,795	22,912	33,754
	Number of taxpayers ('000)	7	10	5	10
	Total tax due (£m)	262	1,337	121	340
£1-2m	Average tax due among taxpayers (£)	95,666	308,497	77,185	78,414
	Number of taxpayers ('000)	6	8	8	8
	Total tax due (£m)	535	2,421	606	615
£2-5m	Average tax due among taxpayers (£)	233,747	754,246	255,485	191,716
	Number of taxpayers ('000)	9	10	10	10
	Total tax due (£m)	2,120	7,571	2,565	1,924
£5m+	Average tax due among taxpayers (£)	719,714	2,154,019	815,394	547,513
	Number of taxpayers ('000)	2	2	2	2

Total tax due (£m)	1,169	3,584	1,357	911
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Notes: Total wealth on death is the wealth that would be taxed under a reformed IHT which includes pension wealth and business assets (including agricultural). The reformed taxes are as per Table 6.  
Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.

If we lowered the rate to make the reform revenue neutral, but kept the current threshold, the average tax liability would be lower than the current system in all wealth bands. However, total tax revenue would remain unchanged as the tax liability would be spread across a greater number of taxpaying estates. This reform would create greater horizontal equity by taxing estates with the same total net worth equally.

## 5.4 Council Tax

Another tax on wealth that regularly receives proposals for reform is Council Tax. Council Tax is a tax levied on residential property. The statutory incidence of the tax is on the person occupying the property, rather than the owner, although it is important to note that part of this cost may be passed on through lower rents. The tax is administered at a local level, with some elements of the tax structure set centrally. The charge is based on banded property values, with the bands fixed across local authorities. However, local authorities have some freedom in setting the tax liability that is paid in each band.

Residential properties in England have not been revalued for Council Tax since 1991, and the current tax bands are based on prices from this period.<sup>30</sup> This creates horizontal inequities in the current system, with properties that have the same value today being taxed different amounts depending on how their value has changed since 1991. A revaluation exercise is almost certainly needed, to ensure tax liabilities are based on what the property is actually worth. As discussed in Section 3.1, the cost of this exercise to government would be around £245 million. However, it is worth noting that the alternative – sticking to 1991 property values – is not without cost: currently all newly built properties have to be assessed as if they had been built in 1991, which is more likely to be open to dispute than the current value of a property.

Revaluation need not affect the revenue raised from Council Tax, nor the average tax liability households face. If the bands were adjusted to current values, maintaining the same proportion of properties in each band, and rates were set the same, the amount of revenue would not change (at a national level). All that would change is *who* pays: properties that have appreciated considerably since 1991 would attract a higher liability, while properties experiencing more modest growth would see a decline in their tax liability.

However, there are good reasons why we might want to change the rates paid across different tax bands. The current system is highly regressive. The average tax rate paid on a house at the midpoint of the lowest Council Tax band is 1.65%.<sup>31</sup> By contrast, a house at the bottom of the top band attracts an average tax rate of just 0.2%. The regressivity with respect to wealth of the current system is evident in Figure 16. This plots Council Tax paid as a share of wealth across the wealth distribution, based on data from the WAS. A quarter of households in the 25<sup>th</sup>

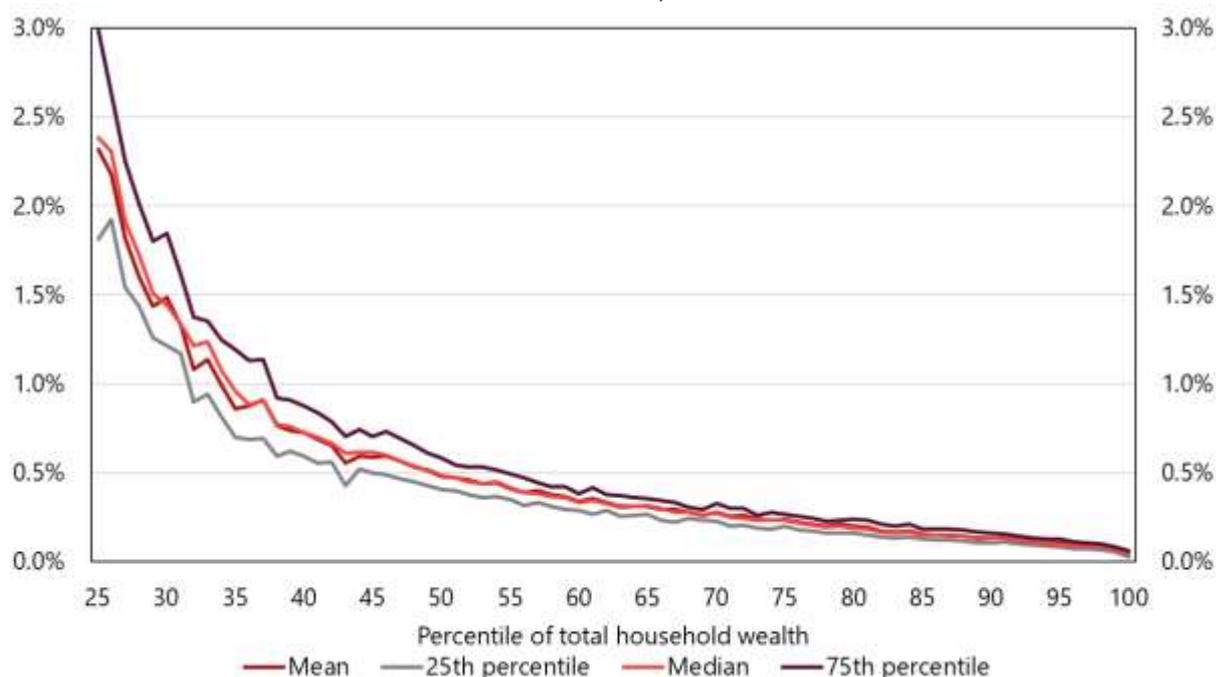
<sup>30</sup> Properties in Wales have since been revalued to 2003 prices, and a new band added at the top.

<sup>31</sup> This takes the average tax liability faced by a property in band A across all local authorities. The endpoints of the bands are set by central government. Here, we use the revalued bands calculated by Adam et al. (2020) and described in the subsequent section (see Table 8).

percentile of the wealth distribution pay more than 2.9% of their wealth in Council Tax. At the 75<sup>th</sup> percentile, the average tax rate is 0.23%, with no household paying more than 0.45%.

A more progressive Council Tax could be achieved by making tax liabilities proportional to property values.<sup>32</sup> Again, this need not affect the total amount of revenue raised, as rates could be set to increase the tax paid at the top of the property distribution and reduce the amount paid by those at the bottom. However, bringing the tax rate charged on valuable properties in line with rates currently paid on properties at the bottom could raise a significant amount of revenue. We model such a reform in the subsequent section.

**FIGURE 16: COUNCIL TAX PAID AS A SHARE OF WEALTH, BY WEALTH PERCENTILE**



Notes: 'Mean' shows the average (mean) share of wealth paid in Council Tax at different percentiles of the wealth distribution. 'Median' shows the median share of wealth paid in Council Tax at different percentiles of the wealth distribution. 'XXth percentile' shows the XX percentile share wealth paid in Council Tax at different percentiles of the wealth distribution. All households are ranked according to total household wealth measured by market value and divided into percentile groups. Based on Wave 6 (July 2016 to March 2018) of the WAS. Weights are scaled to match the full population total.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.

## Approach

To model the revenue that could be raised from a more progressive Council Tax based on current property values, we draw on evidence from Adam et al. (2020), who model the distributional effects of six Council Tax reforms. The first, which we shall use in our analysis, is a revaluation reform whereby properties are revalued and placed in one of the current Council Tax bands (in England), with the band thresholds adjusted to maintain the same proportion of properties in each band. Their estimates suggest that a Council Tax based on revalued property values would have the structure presented in Table 8.

<sup>32</sup> This would still be distinct from having a wealth tax on property, since Council Tax is set by reference to the value of the house someone lives in, not whether they own the house nor how much equity they have in the house if they do own it.

Revaluation alone does nothing to address the regressivity in the system. Under this system, a property worth £250,000 is charged 0.62%, while a property worth £10 million is charged just 0.0035%. We can use these revalued tax bands as a basis for considering a more progressive tax. Achieving a more progressive tax does not necessarily mean abolishing the banded system. One option for making Council Tax more proportional to property values would be increasing the tax rate paid in higher bands, perhaps by setting this with reference to the median or midpoint in each band. Adding additional bands would also provide greater capacity for taxing high value properties a higher liability than lower valued properties.

**TABLE 8: COUNCIL TAX STRUCTURE WITH CURRENT PROPERTY VALUES**

Tax band	Lower threshold (£)	Upper threshold (£)	Average tax payment (2019-20) (£)	Tax rate at lower threshold	Tax rate at midpoint	Tax rate at upper threshold	Fraction of properties
A	-	142,000	1,173	N/a	1.65%	0.83%	24%
B	142,001	204,560	1,365	0.96%	0.79%	0.67%	20%
C	204,561	301,810	1,558	0.76%	0.62%	0.52%	22%
D	301,811	415,120	1,750	0.58%	0.49%	0.42%	16%
E	415,121	571,050	2,135	0.51%	0.43%	0.37%	10%
F	571,051	794,420	2,520	0.44%	0.37%	0.32%	5%
G	794,421	1,769,840	2,923	0.37%	0.23%	0.17%	4%
H	1,769,841	-	3,500	0.20%	N/a	N/a	1%

Notes: Average tax payment is the average across local authorities. The 'tax rate at lower/upper threshold' is the average tax rate faced by a property at the lower/upper bound of the tax band under the current system. The 'tax rate at midpoint' is the tax rate faced by a property in the middle of the tax band.

Source: Authors' calculations based on Adam et al. (2020); Ministry of Housing, Communities and Local Government (2019).

In this paper, we will estimate the amount of revenue that could be raised by reforming Council Tax into a continuous progressive tax, under which the tax liability would be set by reference to the exact value of the property, rather than by reference to bands. For the purpose of estimating the revenue that could be raised from Council Tax reform, this exercise is informative even if there is no desire for a system which does away with banding. This is because the amount of revenue raised from a fully continuous tax provides a lower bound on the revenue that would be raised from a banded system which sets the charge by reference to the median or midpoint of the band. Hughson (2020) explains how and why this is also true in the context of a wealth tax. The key intuition is that, because the distribution of property values is skewed to the right, properties at the lower end of each band attract a much higher average tax rate than the property at the median or midpoint.

To estimate the revenue that could be raised from a continuous and proportional Council Tax based on current property values we simply multiply aggregate gross property wealth by the desired tax rate.<sup>33</sup> We estimate the revenue that would be raised under two alternative reforms. The first brings the tax rate in line with the rate paid at the 24<sup>th</sup> percentile of the currently property value distribution under the revalued band system, which is approximately the top of band A. A property at this point, worth £142,000, would pay an average tax rate of roughly 0.83%. The second reform brings the tax rate in line with the average tax rate at the 45<sup>th</sup> percentile of the distribution – the bottom of band C with a property value of around £250,000 – which is 0.76%.

Bringing the tax rate faced by all properties in line with the tax rate currently faced by a property at the 24<sup>th</sup> percentile could raise an additional £17.6 billion, at a one-off admin cost of £245 million (Table 9). Alternatively, charging the rate currently faced by a property at the 45<sup>th</sup> percentile of the distribution could result in a revenue gain of £13.4 billion.

**TABLE 9: REVENUE RAISED FROM COUNCIL TAX REFORM**

Council Tax system	Average tax rate	Revenue (£bn)	Revenue gain (£bn)
Current	0.53	31.8	
Reform 1: tax rate at 24th percentile	0.83	49.4	17.6
Reform 2: tax rate at 45th percentile	0.76	45.2	13.4

Notes: The revenue estimate takes a fixed percentage of the total value of UK housing. Based on Wave 6 (July 2016 to March 2018) of the WAS. Weights are scaled to match the full population total.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.

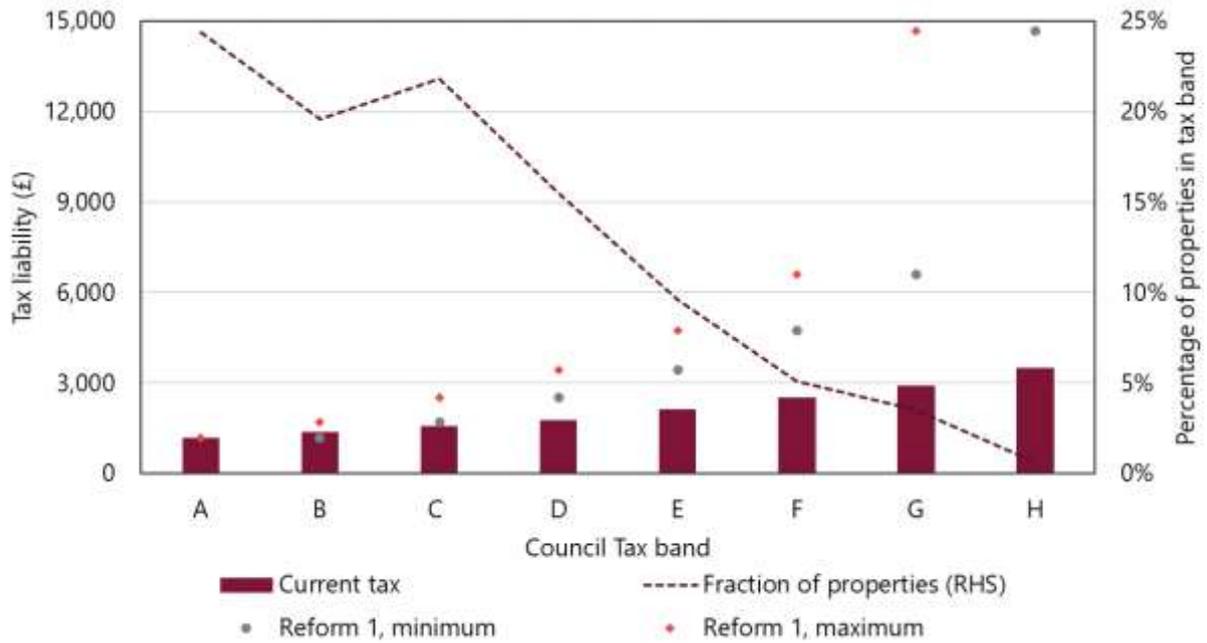
More than a quarter of households would see a reduction in their Council Tax liability under these reforms (Figs 17 and 18). Reductions in Council Tax liabilities would be observed at the bottom of the property value distribution, for properties currently in bands A and B. The top 10% of properties would see a significant increase in their Council Tax charge, with a minimum additional annual charge of £3,000. For properties in the top 1% of the distribution, the minimum additional charge would be £10,000 annually. Under this system, households at the top would be paying the same tax rate as households at the bottom.

Note, however, that we have not yet accounted for the effect of the reform on property prices. We would expect a reform which lowers the tax charged on low value properties, and increases the tax charged on high value properties, to lead to a compression in house prices. High value properties will be worth less, as any buyer now faces a higher Council Tax charge. Meanwhile, the lower Council Tax levied at the bottom of the property distribution would, to some extent, be capitalised into higher property values.

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<sup>33</sup> This implicitly assumes the removal of existing reliefs such as the 25% single-person discount. Adam et al. (2020) argue that there would be efficiency gains from such a reform.

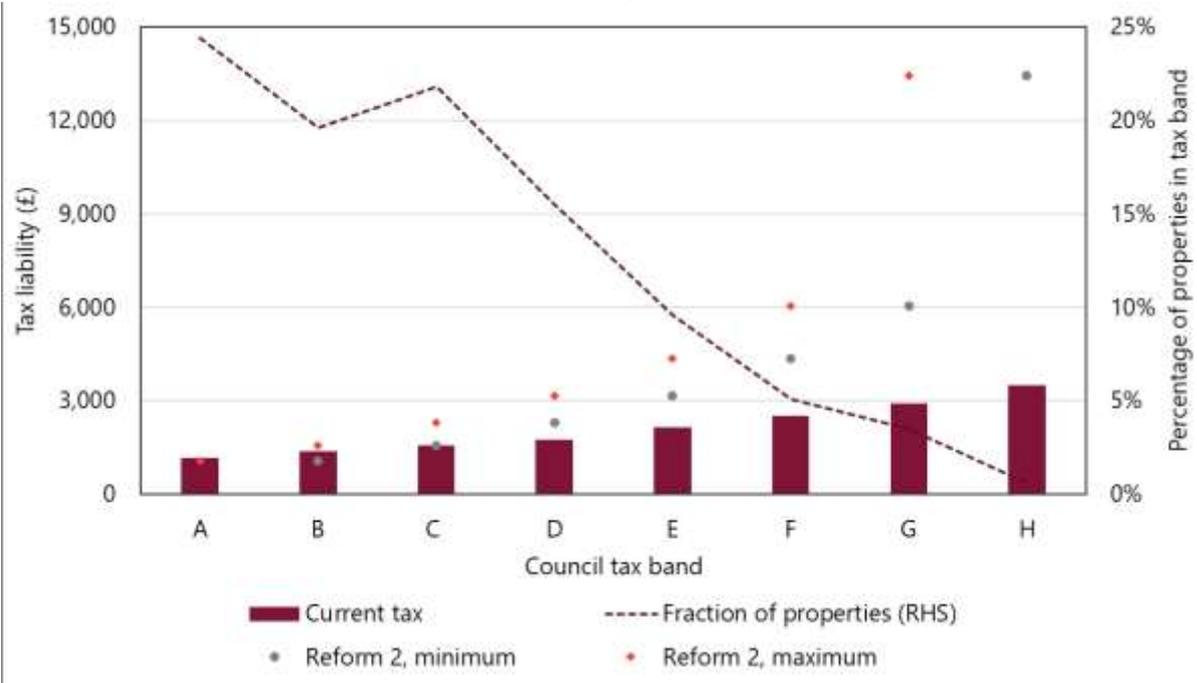
**FIGURE 17: COUNCIL TAX LIABILITY UNDER REFORM 1, BY TAX BAND**



Notes: 'Current tax' is the average tax liability faced in the tax band across local authorities in England. 'Reform 1' is a Council Tax reform which charges all properties the rate currently charged at the 24<sup>th</sup> percentile of the property value distribution, which is 0.83%. The maximum (minimum) shows the tax that would be paid by a property at the upper (lower) threshold of the band, where applicable.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18; Adam et al. (2020).

**FIGURE 18: COUNCIL TAX LIABILITY UNDER REFORM 2, BY TAX BAND**



Notes: 'Current tax' is the average tax liability faced in the tax band across local authorities in England. 'Reform 2' is a Council Tax reform which charges all properties the rate currently charged at the 45<sup>th</sup> percentile of the property value distribution, which is 0.76%. The maximum (minimum) shows the tax that would be paid by a property at the upper (lower) threshold of the band, where applicable.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18; Adam et al. (2020).

## 5.5 Revenues from other taxes

In this section we provide a brief summary of revenues raised by existing taxes to put our revenue estimates and alternative reforms into perspective. We also provide estimates of wealth tax receipts in other countries; however we caution that revenue depends heavily on the specific structure of the tax (as this paper makes clear), so cross-country comparisons should be interpreted with care.

The UK government raised £828bn in taxes in the 2019/20 tax year (Keep, 2021). An additional £250bn in revenue (or £50bn per year over five years) from a one-off wealth tax would have increased tax receipts by 30% (6%) in that year; an annual wealth tax raising £10bn would have represented a 1.2% increase in total tax receipts.

The biggest sources of taxation are taxes on income: income tax receipts accounted for £194bn in 2019/20, and National Insurance contributions added a further £145bn. Value Added Tax (VAT) is the third big source of tax revenue, and raised around £134bn from taxing general expenditure. Council Tax contributed £36bn to total public receipts, while (as noted above) Capital Gains tax raised £8.8 billion; Inheritance Tax raised just over £5bn in the same year (HMRC, 2020e).<sup>34</sup>

Current wealth taxes in other countries raise between 0.5% and 4% of total tax revenues (Perret, 2021; Chamberlain, 2020). In 2018, the wealth tax raised €1.1bn in Spain, around 0.5% of total taxation. The Norwegian wealth tax raised €1.6bn in 2020, approximately 1.1% of total tax revenue, and a similar share is raised in France by the IFI (€2.1bn in 2019). The Swiss wealth tax generates 3.8% of total tax revenue; Perret (2021) notes that Switzerland has always been an outlier in terms of the relative importance of their wealth tax.

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<sup>34</sup> These revenue figures differ slightly from those presented in Sections 5.3 (IHT) and 5.4 (Council Tax), since those are for different tax years, to be comparable to the data sources used in those sections.

## 6. Conclusion

We find that a tax rate of 0.17% on wealth above £500,000 would be needed to raise £10 billion with a flat annual wealth tax. The same revenue could be generated at higher thresholds with a higher tax rate, or by a progressive tax in which those towards the lower end of the wealth distribution pay a lower rate, and those at the top end pay a higher rate. Under this tax structure, just 0.5% of taxpayers would face liquidity constraints.

Alternatively, a one-off wealth tax could raise £250 billion in revenue by charging 4.8% on wealth above £500,000 (effectively, 0.95% per year, paid over a five-year period), with similar possible alternative rates and thresholds. Taxpayers would be more likely to be male, of working age, and residents of London and the South East. Under this tax structure, 6.4% of taxpayers – 526,000 individuals – would face liquidity constraints.

We also estimate administrative costs to the taxpayer and to the government. Administrative costs to taxpayers are estimated at £7.8 billion per year under a tax with a £500,000 threshold, and would decrease in aggregate (but increase on a per-taxpayer basis) at higher thresholds, as there would be fewer taxpayers but those at the top of the wealth distribution typically hold more hard-to-value assets. The cost to the government of setting up the tax would be around £580 million, with ongoing costs for a £500,000 exemption threshold estimated at around £1.2 billion, again decreasing at higher thresholds.

A brief comparison shows that it would be possible to raise similar amounts of revenue to an annual wealth tax, or more, through reforming existing taxes on capital. These reforms would also come at a cost, and would not necessarily avoid some of the challenges imposed by a wealth tax, including a need to re-value housing, and high valuation costs for other assets. However, in many cases the volume of taxpayers would be lower, making these costs per taxpayer more tolerable.

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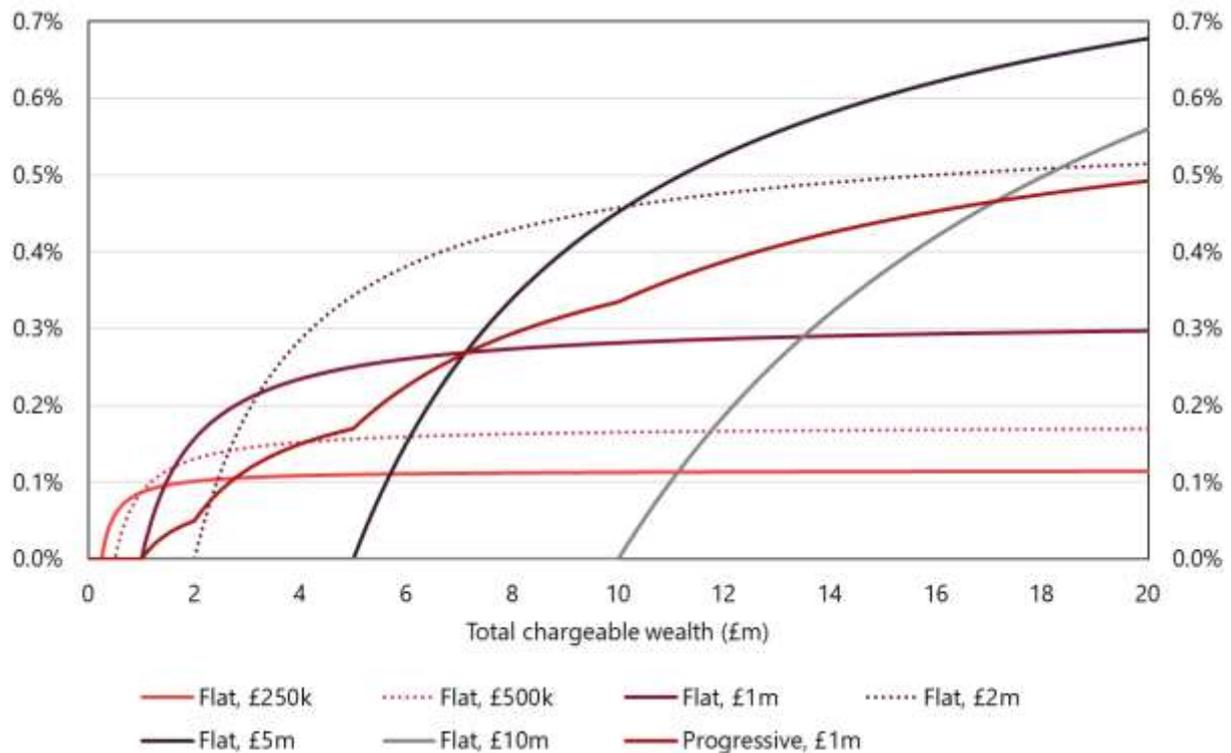
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## Appendix A: Tax paid across the wealth distribution

This section presents evidence on how the average tax rate faced by taxpayers varies by total wealth. Figure A1 shows how the average tax rate increases with wealth under each of the annual tax structures presented in Table 1. Figures A2 and A3 provide a similar illustration for the one-off tax structures presented in Table 4. It is clear that the average tax rate eventually converges to the headline marginal rate. The average tax rate appears to increase less rapidly than in Figures 2 and 13, where the average tax rate is plotted with wealth percentiles on the X-axis. This is because the distribution of wealth is heavily skewed to the right.

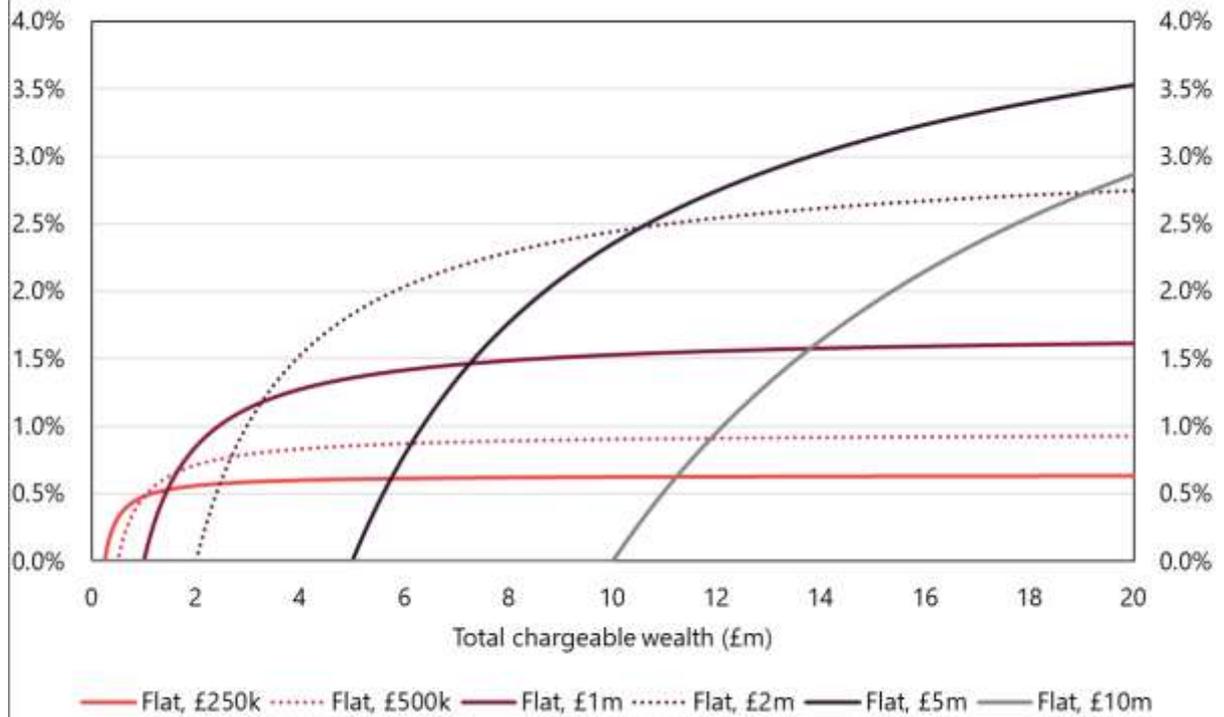
**FIGURE A1: AVERAGE TAX RATE UNDER AN ANNUAL WEALTH TAX, BY TOTAL CHARGEABLE WEALTH**



Notes: The average tax rate is the amount that should be paid at each level of wealth. 'Total chargeable wealth' is total market wealth excluding low-value items, which are exempted. Tax rates used are as per Table 1. Figure 2 shows the average tax rate by wealth percentile.

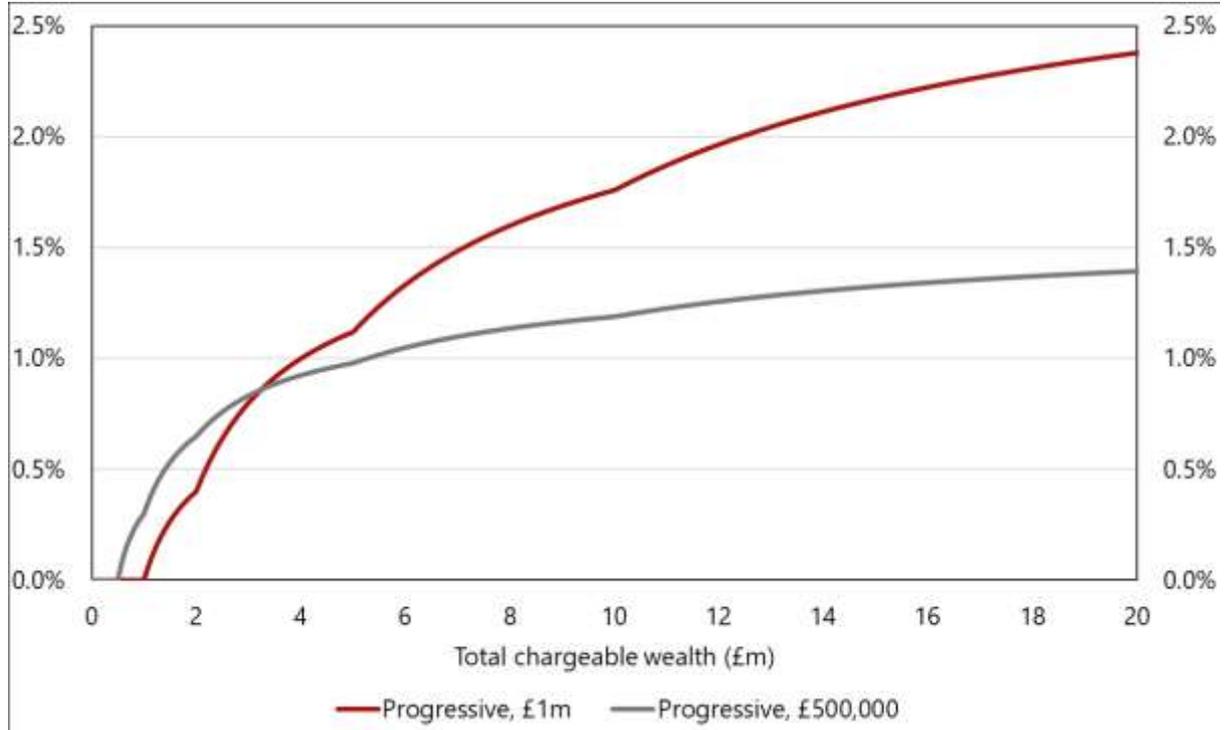
Source: Authors' calculations.

**FIGURE A2: AVERAGE TAX RATE UNDER A FLAT ONE-OFF WEALTH TAX, BY TOTAL CHARGEABLE WEALTH**



Notes: The average tax rate is the amount that should be paid at each level of wealth. 'Total chargeable wealth' is total market wealth excluding low-value items, which are exempted. Tax rates used are as per Table 4. Figure 13 shows the average tax rate by wealth percentile.  
Source: Authors' calculations.

**FIGURE A3: AVERAGE TAX RATE UNDER A PROGRESSIVE ONE-OFF WEALTH TAX, BY TOTAL CHARGEABLE WEALTH**



Notes: The average tax rate is the amount that should be paid at each level of wealth. 'Total chargeable wealth' is total market wealth excluding low-value items, which are exempted. Tax rates used are as per Table 4. Figure 13 shows the average tax rate by wealth percentile.  
Source: Authors' calculations.

## Appendix B: Geographical distribution of taxpayers

In this appendix we show the geographical distribution of taxpayers for different exemption thresholds. For a threshold of up to £1 million per individual, taxpayers are heavily concentrated in London and the South East. However, when the threshold is set to £5 million, taxpayers are evenly spread across a few key regions: the South East (21%), the South West (18%) and the North West (16%). London accounts for 13% of taxpayers at this threshold.

**FIGURE B1: GEOGRAPHICAL DISTRIBUTION OF TAXPAYERS WITH A £250,000 EXEMPTION THRESHOLD**



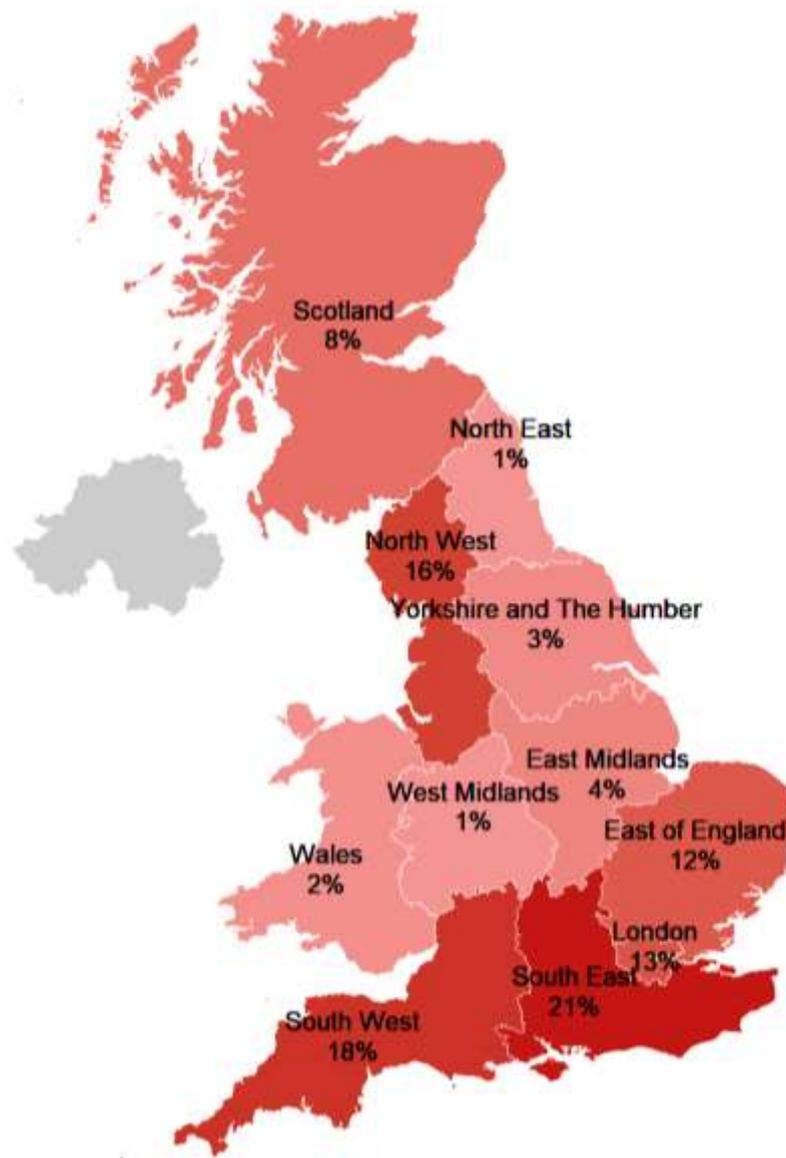
Notes: This chart shows how taxpayers would be distributed across the country if the tax featured an exemption threshold of £250,000. The distribution is independent of the tax rate. Individuals in the Sunday Times Rich List are not included in this analysis as we have no information on their region of residence. We have no data for Northern Ireland, and so the percentages shown are the percentage of taxpayers in Great Britain living in each region. Source: ONS, Wealth and Assets Survey, 2016–18.

**FIGURE B2: GEOGRAPHICAL DISTRIBUTION OF TAXPAYERS WITH A £1 MILLION EXEMPTION THRESHOLD**



Notes: This chart shows how taxpayers would be distributed across the country if the tax featured an exemption threshold of £1,000,000. The distribution is independent of the tax rate. Individuals in the Sunday Times Rich List are not included in this analysis as we have no information on their region of residence. We have no data for Northern Ireland, and so the percentages shown are the percentage of taxpayers in Great Britain living in each region. Source: ONS, Wealth and Assets Survey, 2016-18.

**FIGURE B3: GEOGRAPHICAL DISTRIBUTION OF TAXPAYERS WITH A £5 MILLION EXEMPTION THRESHOLD**



Notes: This chart shows how taxpayers would be distributed across the country if the tax featured an exemption threshold of £5,000,000. The distribution is independent of the tax rate. Individuals in the Sunday Times Rich List are not included in this analysis as we have no information on their region of residence. We have no data for Northern Ireland, and so the percentages shown are the percentage of taxpayers in Great Britain living in each region.  
Source: ONS, Wealth and Assets Survey, 2016–18.

## Appendix C: Liquidity constrained taxpayers

This appendix provides the statistics underlying Figures 7, 8 and 14, which show the number and share of taxpayers who are liquidity constrained under different tax structures. We also present estimates of the share of taxpayers who would be liquidity constrained using alternative thresholds to define 'constrained'.

Lowering the threshold at which an individual is deemed to be liquidity constrained naturally increases the share of taxpayers who are constrained for a given tax threshold. An annual wealth tax generating £10 billion with a £500,000 threshold would create liquidity constraints for 1% of taxpayers when 'liquidity constrained' as defined as having a tax liability in excess of 10% of net income and 5% of net income plus liquid wealth (Table C1). This compares to 0.5% using our headline cutoff of 20% of net income and 10% of net income plus liquid wealth. Raising the cutoff to 40% of net income and 20% of net income plus liquid wealth lowers the share of liquidity constrained taxpayers to 0.2%.

**TABLE C1: PERCENTAGE OF TAXPAYERS LIQUIDITY CONSTRAINED UNDER ANNUAL TAXES USING ALTERNATIVE DEFINITIONS, BY RANGE OF NET WEALTH**

Threshold (£)	Rate	Percentage of taxpayers liquidity constrained by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat taxes raising £10bn</b>							
Definition (a) immediate tax liability > 20% net income <i>and</i> > 10% net income plus liquid wealth							
5,000,000	0.90%	20.3%					20.3%
2,000,000	0.57%	6.3%				3.7%	23.9%
1,000,000	0.31%	1.6%			0.5%	3.9%	18.2%
500,000	0.17%	0.5%		0.1%	0.5%	2.2%	13.7%
250,000	0.12%	0.2%	0.0%	0.1%	0.4%	0.7%	12.8%
Definition (b) immediate tax liability > 10% net income <i>and</i> > 5% net income plus liquid wealth							
5,000,000	0.90%	25.9%					25.9%
2,000,000	0.57%	10.9%				6.8%	38.5%
1,000,000	0.31%	3.2%			0.8%	9.9%	30.4%
500,000	0.17%	1.1%		0.3%	0.8%	6.3%	20.2%
250,000	0.12%	0.6%	0.2%	0.4%	0.7%	4.4%	18.2%
Definition (c) immediate tax liability > 40% net income <i>and</i> > 20% net income plus liquid wealth							
5,000,000	0.90%	13.9%					13.9%
2,000,000	0.57%	3.4%				1.2%	18.2%
1,000,000	0.31%	0.7%			0.3%	0.7%	13.0%
500,000	0.17%	0.2%		0.1%	0.3%	0.3%	5.4%
250,000	0.12%	0.1%	0.0%	0.1%	0.3%	0.3%	3.1%
<b>Progressive taxes raising £10bn</b>							
Definition (a) immediate tax liability > 20% net income <i>and</i> > 10% net income plus liquid wealth							
Starting at £1,000,000		0.9%			0.1%	1.5%	21.2%

Notes: Under our main specification (definition (a)) an individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Alternative specifications (b) and (c) use, respectively, weaker and stronger definitions of liquidity constraints. Tax rates used are as per Table 1. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals

at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

**TABLE C2: NUMBER OF TAXPAYERS LIQUIDITY CONSTRAINED UNDER ANNUAL TAXES RAISING £10BN IN REVENUE, BY RANGE OF NET WEALTH**

Threshold per individual (£)	Rate	Number of taxpayers liquidity constrained ('000) by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat taxes raising £10bn</b>							
5,000,000	0.90%	17					17
2,000,000	0.57%	40				20	19
1,000,000	0.31%	48			12	21	15
500,000	0.17%	42		7	12	12	11
250,000	0.12%	32	3	5	9	4	10
<b>Progressive taxes raising £10bn</b>							
Starting at £1,000,000		28			2	8	17

Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 1. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

**TABLE C3: PERCENTAGE OF LIQUIDITY CONSTRAINED TAXPAYERS UNDER ONE-OFF TAXES, BY RANGE OF WEALTH**

Threshold (£)	Annualised rate	Percentage of taxpayers liquidity constrained by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat tax at 5%</b>							
5,000,000	1%	21.3%					21.3%
2,000,000	1%	10.0%				6.3%	35.0%
1,000,000	1%	5.8%			1.5%	19.7%	40.2%
500,000	1%	7.0%		1.6%	12.7%	27.6%	41.1%
250,000	1%	8.2%	1.1%	9.3%	21.1%	29.9%	41.1%
<b>Flat taxes raising £250bn</b>							
5,000,000	4.71%	38.4%					38.4%
2,000,000	3.05%	24.5%				20.1%	53.8%
1,000,000	1.70%	11.2%			5.6%	31.1%	45.1%
500,000	0.95%	6.4%		1.4%	11.4%	26.7%	40.1%
250,000	0.64%	3.4%	0.5%	2.8%	9.1%	19.1%	32.0%
<b>Progressive taxes raising £250bn</b>							
Starting at £500,000		4.5%		0.5%	6.8%	26.2%	41.1%

Starting at £1,000,000	5.6%	0.9%	20.7%	41.7%
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Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 4, where we target £250bn in revenue under each tax structure. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

**TABLE C4: NUMBER OF LIQUIDITY CONSTRAINED TAXPAYERS UNDER ONE-OFF TAXES, BY RANGE OF WEALTH**

Threshold (£)	Annualised rate	Number of taxpayers liquidity constrained ('000) by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat tax at 5%</b>							
5,000,000	1%	17					17
2,000,000	1%	63				35	29
1,000,000	1%	176			36	108	33
500,000	1%	575		85	305	151	34
250,000	1%	1,269	83	482	506	164	34
<b>Flat taxes raising £250bn</b>							
5,000,000	4.71%	31					31
2,000,000	3.05%	154				110	44
1,000,000	1.70%	341			134	170	37
500,000	0.95%	526		74	274	146	33
250,000	0.64%	528	36	143	218	105	26
<b>Progressive taxes raising £250bn</b>							
Starting at £500,000		369		28	164	144	34
Starting at £1,000,000		169			22	113	34

Notes: An individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 20% of their net income *and* 10% of their net income plus liquid wealth. Tax rates used are as per Table 4, where we target £250bn in revenue under each tax structure. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

**TABLE C5: ALTERNATIVE LIQUIDITY CONSTRAINT DEFINITION: IMMEDIATE TAX LIABILITY > 10% OF NET INCOME AND > 5% OF NET INCOME PLUS LIQUID WEALTH**

Threshold (£)	Annualised rate	Percentage of taxpayers liquidity constrained by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat tax at 5%</b>							

5,000,000	1%	27.0%					27.0%
2,000,000	1%	18.2%				14.8%	41.7%
1,000,000	1%	13.9%			7.6%	36.7%	46.3%
500,000	1%	18.3%		8.7%	32.2%	44.9%	46.3%
250,000	1%	21.1%	5.7%	30.9%	40.1%	47.7%	46.3%
<b>Flat taxes raising £250bn</b>							
5,000,000	4.71%	50.2%					50.2%
2,000,000	3.05%	34.6%				30.2%	64.0%
1,000,000	1.70%	22.7%			15.9%	47.8%	56.9%
500,000	0.95%	17.2%		7.8%	30.5%	43.9%	46.3%
250,000	0.64%	12.1%	2.2%	15.6%	27.4%	37.4%	43.3%

Notes: In this alternative specification, an individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 10% of their net income *and* 5% of their net income plus liquid wealth. Tax rates used are as per Table 4, where we target £250bn in revenue under each tax structure. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

**TABLE C6: ALTERNATIVE LIQUIDITY CONSTRAINT DEFINITION: IMMEDIATE TAX LIABILITY > 40% OF NET INCOME AND > 20% OF NET INCOME PLUS LIQUID WEALTH**

Threshold (£)	Annualised rate	Percentage of taxpayers liquidity constrained by range of total wealth					
		All taxpayers	£250k-500k	£500k-1m	£1m-2m	£2m-5m	£5m+
<b>Flat tax at 5%</b>							
5,000,000	1%	14.5%					14.5%
2,000,000	1%	5.8%				3.3%	22.7%
1,000,000	1%	2.3%			0.5%	6.5%	27.0%
500,000	1%	1.9%		0.5%	1.9%	11.0%	27.2%
250,000	1%	1.9%	0.3%	1.2%	4.8%	13.4%	28.2%
<b>Flat taxes raising £250bn</b>							
5,000,000	4.71%	30.9%					30.9%
2,000,000	3.05%	14.7%				10.9%	40.5%
1,000,000	1.70%	4.7%			1.1%	15.4%	37.1%
500,000	0.95%	1.7%		0.5%	1.8%	9.7%	27.0%
250,000	0.64%	0.8%	0.2%	0.6%	1.4%	6.3%	20.2%

Notes: In this alternative specification, an individual is liquidity constrained if their immediate tax liability (defined in Section 3.4) exceeds more than 40% of their net income *and* 20% of their net income plus liquid wealth. Tax rates used are as per Table 4, where we target £250bn in revenue under each tax structure. Individuals in the Sunday Times Rich List are not included in this analysis. For individuals at the top of the WAS, we use their Pareto-adjusted business wealth values, but adjust their net income to maintain the same ratio of wealth to income as reported in the WAS. We do not present liquidity analysis using thresholds above £5 million due to small sample sizes.

Source: ONS, Wealth and Assets Survey, 2016–18.

## Appendix D: IHT reform

In this section we present our revenue estimates for the Inheritance Tax (IHT) reforms described in Section 5.3 when we allow for avoidance responses. We base our modelling of avoidance responses on empirical estimates of the elasticity of taxable wealth with respect to the net-of-tax rate for IHT, which are in the range 0.1–0.2 (Kopczuk, 2013). These estimates suggest that a 1% reduction in the share of the estate that would be passed on after tax would lead to a 0.1–0.2% reduction in the size of the estate after behavioural responses, on average. We take the upper bound of these estimates. However, it is not clear how, or to what extent, individuals would respond to these reforms, since they shut off some of the channels currently used to avoid the tax. We therefore expect the avoidance response to be smaller than this statistic suggests.

For each individual, we apply the elasticity to the percentage change in the net-of-average tax rate they face under the reformed system relative to the existing system. Note that some of the reforms we propose lead to a reduction in the tax rate faced by some individuals. As a result, we expect some individuals to *increase* their taxable wealth in response to the reform – i.e. pass on more wealth, while others will reduce their taxable wealth. It is therefore not obvious from the outset that the reforms we suggest should have a negative effect on taxable wealth through behavioural responses, overall.

Accounting for behavioural responses in this way has little effect on our revenue estimates (Table D1). Under no reform is the amount of revenue reduced by more than £200 million.

**TABLE D1: REVENUE FROM REFORMING IHT, ASSUMING SOME AVOIDANCE RESPONSE (ILLUSTRATIVE)**

	<b>Taxpayers ('000)</b>	<b>Effective threshold (£)</b>	<b>Rate</b>	<b>Revenue  (£bn)</b>	<b>Administrative cost (£m)</b>
Current IHT tax base	25	583,400	0.40	4.4	36
adding pension wealth	37	583,400	0.40	6.1	54
adding business wealth	25	583,400	0.40	5.3	41
adding pension and business wealth	37	583,400	0.40	6.9	59
Raising the threshold	25	698,934	0.40	5.6	40
Reducing the rate	37	583,400	0.25	4.5	59

Notes: In this table we assume an elasticity of taxable wealth with respect to the net-of-tax rate of 0.2. ‘Current IHT tax base’ shows our stylised model of the current IHT system. The ‘effective threshold’ is the amount of wealth required to be among the taxpaying population. The revenue calculation is the rate applied to total wealth above the effective threshold. ‘Adding pension wealth’ adds pensions to the current tax base, according to their inherited value, keeping the effective threshold fixed. ‘Adding business wealth’ adds businesses and unlisted shares to the current tax base, keeping the effective threshold fixed. ‘Adding pensions and business wealth’ combines the previous two reforms. ‘Raising the threshold’ takes the tax base as inclusive of all assets (pensions and business wealth included) and raises the threshold to maintain the same number of taxpayers as the current IHT system. ‘Reducing the rate’ calculates the rate required to generate the same amount of revenue as the ‘current’ IHT system (our model), from the same number of taxpayers, with a comprehensive tax base.

Source: Authors’ calculations based on the ONS, Wealth and Assets Survey, 2016–18.



## Appendix E: Impact of narrowing the tax base

Throughout this report we have examined revenue estimates based on a comprehensive tax base – that is, including all wealth in the base of taxable assets, with only a few exemptions for some low-value items as described in Section 2.1. This is consistent with the recommendation Advani, Chamberlain and Summers (2020b), as it will prevent arbitrary inequalities in the tax burden being generated across taxpayers who happen to have different asset mixes, and help to limit avoidance through taxpayers changing their asset mix.

In this appendix we present estimates of the revenue that would be lost by exempting major asset classes from the tax base (Table E1). These are compared to a 100% benchmark which represents revenue raised from a comprehensive wealth tax starting at a given threshold. The percentage lost from exempting assets is independent of the rates charged above this threshold.<sup>35</sup> These revenue loss estimates vary according to the exemption threshold, as the asset mix of taxpayers changes across the distribution. For example, at thresholds of £500,000 or below, more than half of revenue which could be raised with a comprehensive tax base would be lost if pension assets were exempted. By contrast, at thresholds of £2 million or more, the exemption of business assets would have a larger impact, as business wealth becomes a more dominant part of taxpayers' asset mix.

It is worth explicitly noting that the numbers in Table E1 are not equivalent to the share of total wealth that is held in the form of the relevant asset by those taxpayers. The asset class exemption takes a 'slice' off the top of the taxpayer's taxable wealth (of which it comprises a larger proportion), so that the full impact of the exemption works through the taxpayer's marginal tax rate rather than the average tax rate.

**TABLE E1: REVENUE LOSS FROM EXEMPTING ASSETS**

Share of revenue lost by excluding...						
Threshold (£)	Main home	All property	Pensions	Business assets	Financial wealth	Physical wealth
250,000	31%	38%	54%	16%	17%	2%
500,000	30%	37%	54%	23%	19%	2%
1,000,000	25%	34%	43%	39%	20%	2%
2,000,000	15%	23%	20%	64%	17%	1%
5,000,000	7%	13%	5%	86%	9%	0%
10,000,000	3%	6%	1%	94%	4%	0%

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.

<sup>35</sup> See Table 1 for the taxpayer counts which apply at this threshold.

## Appendix F: Value of household contents

In our main analysis, we exclude the value of household contents from the tax base. As discussed in Section 2.1, we expect that most items worth more than £3000 (below which a *de minimis* exemption applies) will be included under “collectibles and valuables” or “vehicles”. However, it is possible that some household appliances, items of furniture, and electronic devices, are worth more than £3000. To assess the potential magnitude of this issue, we use eBay sales data to analyse the price of a range of household goods that we think are likely to be included under household contents. This enables us to obtain data on the sale price of new and used items.

The relevant valuation concept for a wealth tax is market value—the price for which household goods could be sold. We can use the “used” price as a proxy for market value, and the “new” price as the replacement cost. Typically, the replacement cost will exceed market value. However, eBay sales data suffer from a selection problem: there is a fixed cost to selling goods, and individuals will only sell used goods if the expected price is enough to compensate for the hassle and financial cost of selling. Moreover, used goods which are in poor condition will be less likely to sell, which may mean that cheaper models of new items are less likely to be re-sold. To minimise selection issues and create a fairer comparison of replacement cost and market value, we compare narrowly-defined items. First, we search for items within narrowly-defined eBay sub-categories. For instance, rather than search “washing machine” under “All Categories”, we search within the “Washing Machines” sub-category of “Appliances”, which should avoid including items such as washing machine parts, which may be more likely to sell new than used. Second, we compare same brands, choosing the top three selling brands for each item. This should ensure that we compare items of a similar quality.

Table F1 shows that both the replacement cost and market value of these household goods is well below the £3000 cutoff. The vast majority of items sell for less than £3000 even when new. While some households will own household goods worth more than £3000, this is likely to be just a tiny fraction of what is included under household contents by WAS respondents, noting that individuals are already asked separately about vehicles, collectibles and valuables.

Including household contents has a small effect on our revenue estimates. We estimate the impact of including household contents valued at 40% of their replacement cost. This is based on a weighted average of the market value to replacement cost ratios reported for common household items in Table F1, where items are weighted by their average price when new. It is possible that this overestimates the market value of household contents, since smaller items such as clothing are likely to have little resale value. Using a ratio of 40% should therefore give a reasonable upper bound on the revenue effects. We estimate that including household contents increases the revenue that could be raised from an annual tax with a £500,000 threshold and a rate of 0.16% from £10 billion to £10.2 billion. A one-off tax charging 5% on wealth above £500,000 could raise £269 billion if household contents were included, compared to £263 billion if not. The higher the threshold, the smaller the revenue gain from including household contents, since household contents represent a small fraction of the wealth of richer households (Advani, Bangham and Leslie, 2021).

TABLE F1: VALUE OF HOUSEHOLD GOODS

Item (% of new items sold for > £3000)	Average new price (replacement cost)	Average used price (market value)
Appliances		

Dishwasher (0%)	Cookology	£207.28	£84.26
	Essentials	£175.03	£56.87
	Bosch	£360.11	£71.35
Fridge (tall) (0%)	Sia	£130.49	£51.92
	Russell Hobbs	£115.59	£44.30
	Bush	£132.91	£57.11
Freezer (0%)	Cookology	£155.38	£48.69
	Bush	£143.35	£69.81
	Essentials	£127.87	£56.45
Washing machine (0%)	Beko	£209.75	£53.53
	Indesit	£201.74	£50.76
	Hotpoint	£249.37	£55.58
Tumble dryer (0%)	Beko	£220.40	£60.74
	Candy	£221.02	£65.42
	Hoover	£229.19	£68.93
Oven (0.01%)	Cookology	£268.31	£72.24
	Hotpoint	£226.84	£59.58
	MyAppliances	£159.15	£50.45
Hob (0%)	Cookology	£122.02	£48.18
	Sia	£123.52	£41.07
	MyAppliances	£113.11	£20.43
<b>Electronics</b>			
Television (0.08%)	Sharp	£219.87	£71.15
	LG	£404.84	£117.16
	Sony	£453.45	£93.59
Laptop (0.03%)	Lenovo	£383.91	£177.37
	HP	£404.33	£152.56
	ASUS	£408.33	£203.58
PC desktop (0.1%)	Intel	£288.51	£213.96
	Dell	£286.54	£101.20
	Apple	£556.29	£309.95
Games console (0.01%)	Microsoft	£479.56	£112.29
	Sony	£382.24	£116.34
	Nintendo	£168.37	£80.27
<b>Furniture</b>			
Sofa (0.02%)			

	Homcom	£173.61	£76.51
	Cloud Nine	£135.71	£70.46
	Chesterfield	£701.91	£330.06
Dining table and chairs (set) (0%)			
	Corona	£146.19	£56.14
	Julian Bowen	£197.14	£61.47
Double bed (0%)			
	Be&D	£186.41	£65.08
	hOme	£116.41	£75.75
	Panana	£92.53	£68.50
Desk (0%)			
	Homcom	£78.35	£36.76
	IKEA	£59.58	£36.58
	Argos	£66.48	£21.85
Wardrobe (0%)			
	Argos	£161.93	£37.72
	Funime	£18.60	£19.10
	Corona	£165.45	£56.69
Garden patio set (0%)			
	Outsunny	£236.27	£146.97
	Abreo	£382.04	£290.69
	Panana	£229.92	£123.05

Notes: Average sale price for “new” and “used” items sold to UK buyers on eBay in the year to April 2021. The percentage of new items that sold for > £3000 includes all brands of the item. For each item, the top three best-selling brands are selected based on sales of new items.

Source: Authors' calculations based on eBay sales data.

## Appendix G: Equal split of assets

In this section we illustrate the revenue effects of households splitting their (non-pension) assets equally between spouses. Table G1 illustrates the revenue that would be raised with the headline rates presented in Table 1 under three alternative scenarios. The first is a situation in which wealth is retained by the individual who reports ownership of each asset in the WAS, with no other behavioural response. The second is a situation in which couples split all assets equally, with the exception of pensions which cannot typically be transferred. For comparison, we also report the revenue estimates from our 'low avoidance' scenario, which takes into account the entire range of response margins individuals could engage in (see Section 3.1 for details).

**TABLE G1: REVENUE ESTIMATES FOR AN ANNUAL WEALTH TAX WITH EQUAL ASSET SPLITTING AMONG COUPLES**

Threshold (£)	Rate	Revenue (no avoidance)		Low avoidance (Table 1)
		Wealth retained by current owner	Equal splitting of wealth exc. Pensions	
<b>Flat taxes</b>				
10,000,000	1.12%	10.1	10.0	10.0
5,000,000	0.90%	10.1	10.0	10.0
2,000,000	0.57%	10.2	10.0	10.0
1,000,000	0.31%	10.4	10.1	10.0
500,000	0.17%	10.7	10.0	10.0
250,000	0.12%	10.9	10.2	10.0
<b>Progressive taxes</b>				
1,000,000	0.10%			
2,000,000	0.25%			
5,000,000	0.50%	10.4	10.0	10.0
10,000,000	0.65%			

Notes: Tax rates are taken from Table 1, for an annual wealth tax which raises £10bn under a 'low avoidance' scenario. 'Wealth retained by current owner' assigns the value of assets to the household member who reports owning them. 'Equal splitting of wealth exc. Pensions' divides household assets (excluding pensions) equally between spouses.

Source: Authors' calculations based on the ONS, Wealth and Assets Survey, 2016–18.