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rich really pay?
New evidence from tax
microdata in the UK**

CAGE Policy Briefing no. 27
June 2020

Arun Advani
Andy Summers

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Arun Advani, Assistant Professor, University of Warwick Economics,
CAGE, IFS

Andy Summers, Assistant Professor, LSE Law, International Inequalities
Institute

Published by

CAGE Warwick warwick.ac.uk/cage

LSE International Inequalities Institute

This research was funded by the Economic and Social Research Council (ESRC) through the CAGE Research Centre at Warwick (ES/L011719/1) and by LSE International Inequalities Institute, LSE Law, and Warwick Economics. This work contains statistical data from HM Revenue and Customs (HMRC) which are Crown Copyright. The research data sets used may not exactly reproduce HMRC aggregates. The use of HMRC statistical data in this work does not imply the endorsement of HMRC in relation to the interpretation or analysis of the information. The authors thank Helen Hughson and Hannah Thompson for outstanding research assistance; Felix Koenig and Lorenzo Pessina for foundational work on which this analysis builds; the entire HMRC Datalab team – especially Yee Wan Yau, Alastair Currie, James Dainty and Marius Morkunas – for insights and support; and Helen Miller and Dan Neidle for helpful comments. Correspondence to a.advani.1@warwick.ac.uk and a.d.summers@lse.ac.uk.

This briefing summarises new research on the taxes paid by the UK's richest individuals, using anonymised data collected from the personal tax returns of everyone who received over £100,000 in total remuneration (taxable income plus taxable capital gains). It shows how tax paid as a share of income or total remuneration varies across individuals.

Key findings

- An individual's effective average tax rate (EATR) is the amount of tax they actually pay, as a share of the money they receive. It varies across people depending on where they get their money from – since different sources of income and capital gains are taxed at different rates – and what deductions and reliefs they claim.
- The headline (i.e. statutory) average tax rate on earnings rises to a peak of 47% for those with earnings of more than £2 million. **However, the average person with more than £2 million in taxable income had an EATR of only 40%: for someone at £2 million this represented a tax saving of £140,000.**
- Some people receive money in the form of capital gains, as well as income. These gains are taxed at much lower rates. When we look at both income and gains together ('total remuneration'), EATRs decline above £250,000, on average. **The average person with total remuneration of £10 million had an effective tax rate of just 21%: less than the rate that would be paid by someone on median earnings of £30,000.**
- These averages hide substantial variation. Almost one quarter of individuals with total remuneration above £100,000 paid the headline average rate for earnings. By contrast, **one in ten people with total remuneration over £1 million paid a lower EATR than someone earning just £15,000.** This proportion rises to one in four of those with total remuneration between £5 million and £10 million.
- These low EATRs almost exclusively benefit investors and business owners, rather than employed or self-employed earners. Variation in EATRs is largely driven by the different tax rates that are available to people depending on where their money comes from. This distorts people's choices about how to work, without clear evidence of benefits for entrepreneurship or investment.
- **There is a lot of tax revenue at stake.** A static estimate implies up to an additional £20 billion could be raised if all taxable income and gains were taxed at the headline rates applicable to earnings. However, this would require removing all deductions and reliefs except pension and gift aid relief at the basic rate.
- **An Alternative Minimum Tax (AMT) that required everyone earning more than £100,000 to pay at least a 35% tax rate on their taxable income and gains could raise around £11 billion.** This is equivalent to the static effect of increasing the basic rate of Income Tax by 2p, or both the higher and additional rates by 5p. However, an AMT would raise the money from those among the rich who are paying the lowest shares, while limiting the scope for avoidance.

Introduction

Covid-19 is placing unprecedented demands on public spending. As well as temporary measures to protect jobs and livelihoods, the pandemic has exposed gaps in public services that the nation wants fixing for the long-term: in health, social care, education, and other areas. But all this comes at a cost. In the coming years, tax rises are surely on the horizon. The question will be: who should pay?

A key choice is between increasing taxes that affect almost everyone – VAT, National Insurance Contributions, the basic rate of Income Tax – versus targeting tax rises on the richest. But the rich, it is often pointed out, already pay a lot of tax: a frequently cited statistic is that the top 1% pay nearly 30% of all Income Tax. Is it fair, or even possible, to require that they pay more?

We shed new light on this question by analysing anonymised data from the personal tax records of every UK resident who received more than £100,000 per year in taxable income and/or taxable capital gains. We use these data to study the *effective* tax rates paid by the UK's richest individuals, to see how these compared with the *headline* tax rates that people this group are typically assumed to pay.

UK tax rates

Headline tax rates on earnings from employment or self-employment top out at 47%, comprising 45% Income Tax plus 2% employee National Insurance Contributions (NICs). It is natural that most people focus on these rates, because earnings make up three-quarters (75%) of all taxable income. This is true even amongst those with the highest incomes (above £100,000), where earnings are 74% of all income reported.

But other types of remuneration face lower headline rates. Dividend income is taxed at a top rate of 38.1% (30.6% before April 2016). Capital gains are taxed at rates of 10%, 20% or 28%, depending on the type of gain. The composition of income and gains that an individual receives therefore has a significant impact on how much tax they owe overall. Deductions and tax reliefs may further reduce their final tax bill.

In this report, we measure individuals' 'effective average tax rates' (EATRs): the total tax that they paid as a share of their total taxable income and gains ('total remuneration'). In a progressive personal tax system, average tax rates rise with total remuneration. If most rich people paid tax at the headline rates on earnings, we would see EATRs rising with remuneration. But instead amongst the UK's richest individuals, we find a very different pattern.

Findings and implications

Even though collectively the top 1% pay a large amount of Income Tax, this is mostly due to a cohort of high-earning employees who pay the highest rates. Meanwhile, we find that a substantial minority of the UK's richest individuals – mainly investors and business owners – paid extremely low effective rates: much lower than others at the same level of remuneration, and lower even than people on modest earnings.

In a climate where tax rises look inevitable, we have to question whether this situation is fair, and if not, what we can do about it. Low EATRs are driven by structural features of the tax system, not just the misbehaviour of rogue taxpayers. Two key policies largely explain our findings: the decision to tax some forms of remuneration at much lower rates than others, and the availability of generous tax reliefs.

We estimate the additional tax revenue that could be raised, without increasing top tax rates on the rich, by ensuring that everyone in this group actually pays the rates that many people assume they already pay. We also consider the possibility of an Alternative Minimum Tax, which would limit the extent to which deductions, reliefs and low-tax sources of remuneration could be used to reduce overall tax bills.

How we calculate 'effective average tax rates' (EATRs)

We calculate an individual's effective average tax rate (EATR) as the percentage of their total taxable income, or taxable income and gains ('total remuneration'), that they pay in tax. This *average* rate differs from (and will be lower than) their marginal rate, which is the percentage of additional tax that would be due on each *additional* pound they receive.

We refer to the *effective* average tax rate because our measure combines multiple taxes and tax bases (rather than simply looking at each tax in isolation) and also takes into account deductions and tax reliefs that can reduce the tax actually paid.

An individual's EATR depends on where their money comes from, and what deductions and reliefs they claim. Consequently, EATRs can vary even for people with the same total remuneration. We therefore sometimes refer to the *mean* EATR (or the EATR 'on average'), which gives the average EATR for people with a specific level of income or remuneration.¹

We estimate two main EATR series for the tax year 2015-16:

- For our **'income' series**, we calculate the total Income Tax, Class 1 primary (employee), Class 2 & Class 4 (self-employed) National Insurance Contributions (NICs) paid, as a percentage of total taxable income reported.
- For our **'total remuneration' series**, we also add Capital Gains Tax paid to the numerator, and total taxable gains to the denominator.

Our approach takes account of all taxes paid on taxable income and gains at the personal level, based on the concept of statutory incidence. We do not include either Corporation Tax or Class 1 secondary (employer) NICs in our main analyses, because the statutory incidence of these taxes is on firms. We explain in detail our decision to use statutory incidence in Appendix A, and document the robustness of our findings to alternative assumptions about incidence in Appendix B.

The taxes that we cover account for around 42% of total UK tax revenues (HMRC 2020). Individuals pay many other taxes including VAT, Council Tax, Fuel Duty, Air Passenger Duty etc; additionally, taxes paid by firms, such as employer NICs, Corporation Tax and Business Rates, must also ultimately be borne by individuals (although not necessarily by UK residents). An assessment of the overall progressivity or regressivity of the tax and benefits system would need to take account of all of these taxes, as well as benefits (Bourquin and Waters, 2019).

However, analysing the EATRs paid on taxable income and gains specifically is still instructive for two main reasons. First, personal direct taxes are conventionally thought to be the amongst the most progressive elements of the tax system. Taxes such as VAT and Council Tax are not designed or claimed to be progressive, but personal direct taxes are believed to be where most of the tax system's redistribution occurs. Our analysis investigates the extent to which existing taxes on income and gains do in fact achieve this aim.

Second, the principle of 'horizontal equity' suggests that personal direct taxes should be designed to be equal across individuals with the same ability to pay. This implies that two individuals with the same total remuneration should face the same EATR. If they do not, then this can also generate economically inefficient incentives to restructure remuneration to benefit from lower tax rates. Our analysis addresses these issues of equity and efficiency by exploring variability in EATRs across individuals at the same level of remuneration.

¹ We take the democratic mean across all individuals within a given income or remuneration 'bin', meaning that we give each individual within each bin equal weight. Since the bin sizes that we use are relatively small (1000 individuals per bin), our results are not very sensitive to whether we take the democratic or plutocratic (equal weight per pound received) mean.

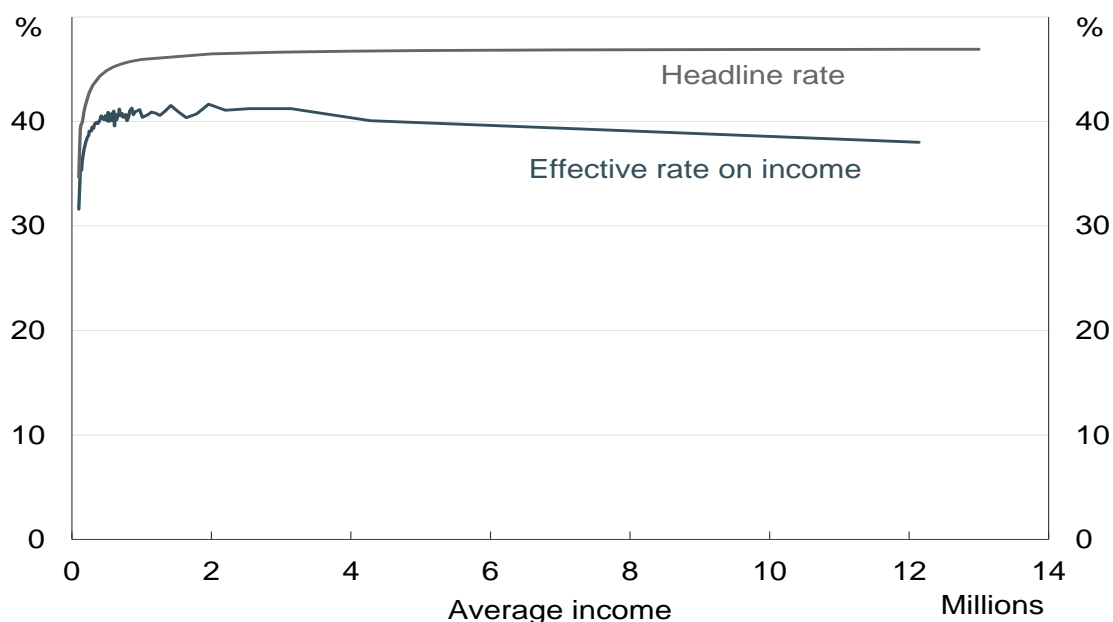
The rich pay much less tax than the headline rates

Headline average tax rates on earnings increase steadily with income. At £100,000 in total earnings, the headline average rate is 35%; this reaches 40% at £150,000, then 45% at £500,000, and finally tops out at 47% for those with total earnings of £2 million or more. When people think about taxes on the rich, it is natural to focus on these rates applicable to earnings, because earnings from employment or self-employment make up three quarters of all taxable income; this is true both for the taxpayer population as a whole, and even just amongst those with incomes above £100,000.²

However, an individual's effective average tax rate (EATR) will only match these headline rates if all income is received in the form of earnings (charged to Income Tax at the main rate plus employee National Insurance Contributions), and no deductions or reliefs are claimed. In fact, many individuals at the top of the income distribution receive a substantial proportion of their income as dividends, which are taxed at a lower rate. Many people also claim substantial deductions and tax reliefs, which can reduce their final tax bill further.

When we take account of these features of the tax system, we find that EATRs do not rise steadily with income, as the headline rates on earnings would suggest. Instead, looking at income only, the mean EATR across the whole taxpayer population peaked at just 41% for individuals with total income of £500,000, and was then flat or slightly declining above this. **The average person with more than £2 million in income had an EATR of only 40%: for someone at £2 million this represented a tax saving of £140,000.** The increasing gap between headline and effective average rates is driven by changes in the composition of income (between earnings, dividends and other investment income), and by increased use of deductions and tax reliefs as total income increases.

Figure 1. Mean effective average tax rates on income among those receiving more than £100k in income, 2016³



Notes: Constructed using data on all reported taxable income going to individuals in 2016. "Effective rate on income" shows the EATR on income only. "Headline rate" shows the headline (statutory) rate on earnings.

Source: Authors' calculations based on HMRC administrative datasets.

² See Figure C1.

³ Editorial note: all references to years in this briefing are based on tax years, giving the later year e.g. tax year 2015-16 is given as 2016.

Deductions reduce the amount of taxable income that is charged to Income Tax,⁴ whereas tax reliefs provide a credit against their tax bill. Some tax reliefs are structural: for example, pension relief serves to ensure that pensions are not taxed both on the way 'in' and the way 'out'. However, other reliefs are intended to achieve incentive effects, such as encouraging investment, and these can be used strategically by individuals on higher incomes to obtain a credit against the Income Tax that would otherwise be payable. A list of principal tax reliefs is published by HMRC (HMRC 2019), but these reliefs are otherwise subject to very little scrutiny (NAO 2020).

These results are based on statutory incidence so do not take account of taxes paid by firms, including Corporation Tax and employer National Insurance Contributions.⁵ However, in Appendix B we show that although accounting for these taxes increases the overall level of EATRs, it does not significantly affect the trend, which is still flat and then declining at the top. Moreover, our results are conservative in that we only take account of taxable income. As we explain in Appendix A, some other forms of income – such as tax-exempt investments like ISAs, and the foreign income of UK-resident 'non-doms' – are not taxable and so are 'missing' from tax returns. If these are concentrated amongst the richest, EATRs would be even lower at the top.

Including capital gains, effective tax rates decline sharply above £250,000

The rich also receive substantial amounts of remuneration in the form of capital gains. A capital gain is the profit that someone makes when they sell (or otherwise 'dispose of') an asset for more than they paid for it (or its value on acquisition). Our focus in this report is on *taxable* capital gains, which cover realised gains in most types of asset except (importantly) people's main homes, which are exempt from Capital Gains Tax.⁶

Capital gains are much more lightly taxed than income, with rates varying between 10% and 28% depending on the type of asset. The 28% rate applies to residential property (other than main homes) and the 'carried interest' of fund managers. The main rate of 20% applies to all other assets, including listed and unlisted shares, tangible assets such as collectibles, and intangible assets such as business goodwill and intellectual property. Gains in business assets that qualify for Entrepreneurs' Relief (where the recipient is an employee or director of the business) attract the lowest tax rate of 10%.

More than 90% of all taxable gains go to individuals with total remuneration (income plus capital gains) above £100,000, and individuals in the top 1% of incomes (above £125,000) receive an average of £47,000 in gains in addition to their income (Advani and Summers, 2020a; Corlett, Advani and Summers, 2020).

Taking into account taxable gains as well as income, EATRs peak at £250,000. At this level, effective rates are already 7pp below the headline average rate on earnings of the same amount. The personal tax system is regressive above £250,000: effective average rates on total remuneration start declining. They decline most rapidly above £600,000, even as the headline rate continues to rise.

On average, individuals with total remuneration of £10 million had an effective average tax rate of just 21%.⁷ This is much less than half the headline average rate for someone at that level of earnings; in fact, it is even less than the rate that would be paid by someone on median earnings of £30,000.

⁴ For most taxpayers, the most important deduction is the Personal Allowance, although this is gradually withdrawn for those with incomes above £100,000.

⁵ For a full discussion of issues around incidence see Appendix A.

⁶ Capital Gains Tax data also excludes gains in assets that are realised through transfers between spouses, to charities, or on death. Individuals with gains below the tax-free allowance (currently £12,000 per year) are also typically excluded.

⁷ This figure is the mean EATR for the 400 individuals who received between £9-11 million in total remuneration, rather than the bins of 1000 individuals we show in Figure 2a.

Figure 2a. Mean effective average tax rates on income and on total remuneration among those receiving more than £100k in income/remuneration, 2016

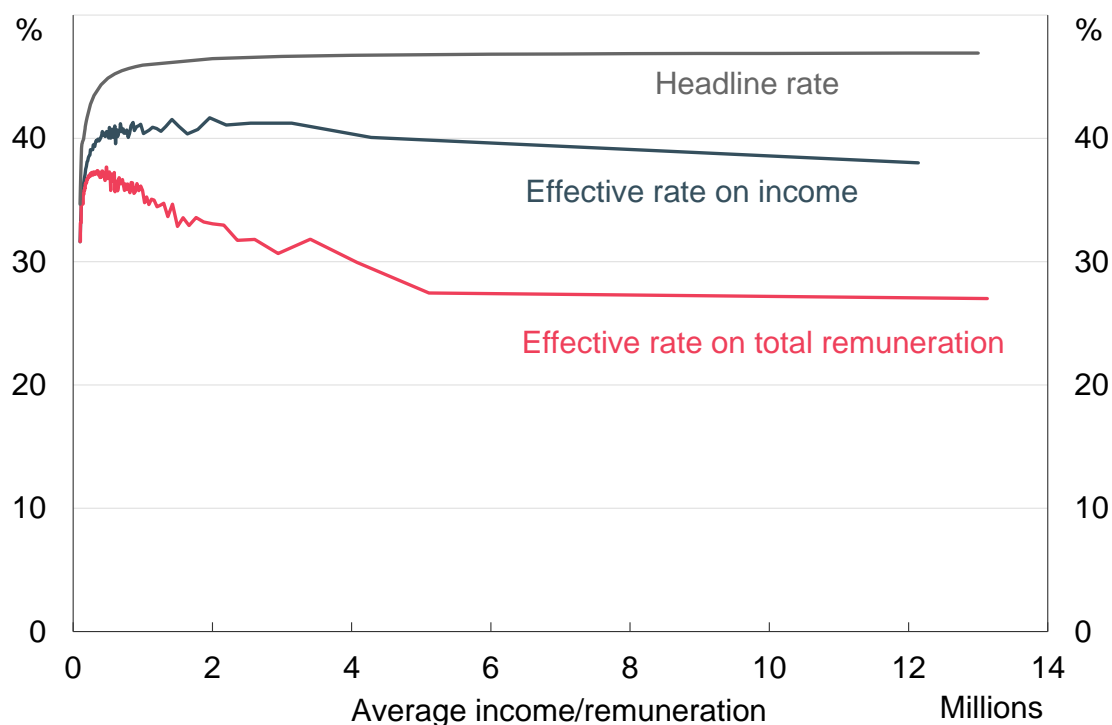
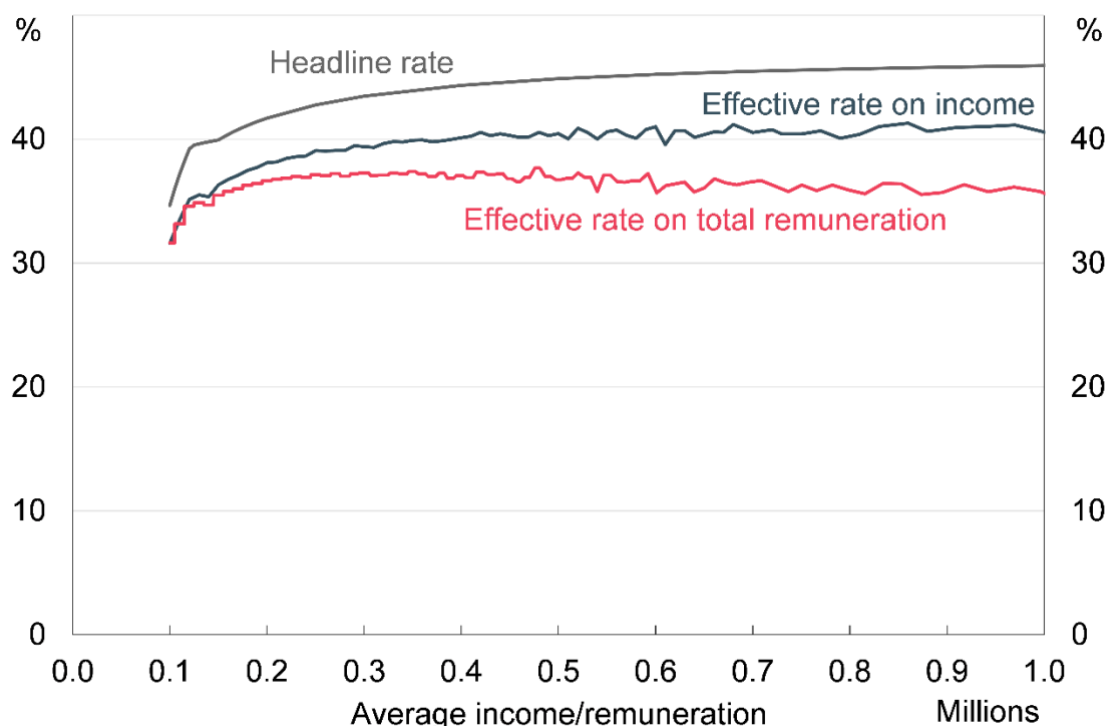


Figure 2b. Mean effective average tax rates on income and on total remuneration among those receiving between £100k and £1m in income/remuneration, 2016



Notes: Constructed using data on all reported taxable income and capital gains going to individuals in 2016. “Effective rate on income” shows the EATR on income only. “Effective rate on total remuneration” shows the EATR on income plus gains. “Headline rate” shows the headline (statutory) rate on earnings.

Source: Authors' calculations based on HMRC administrative datasets.

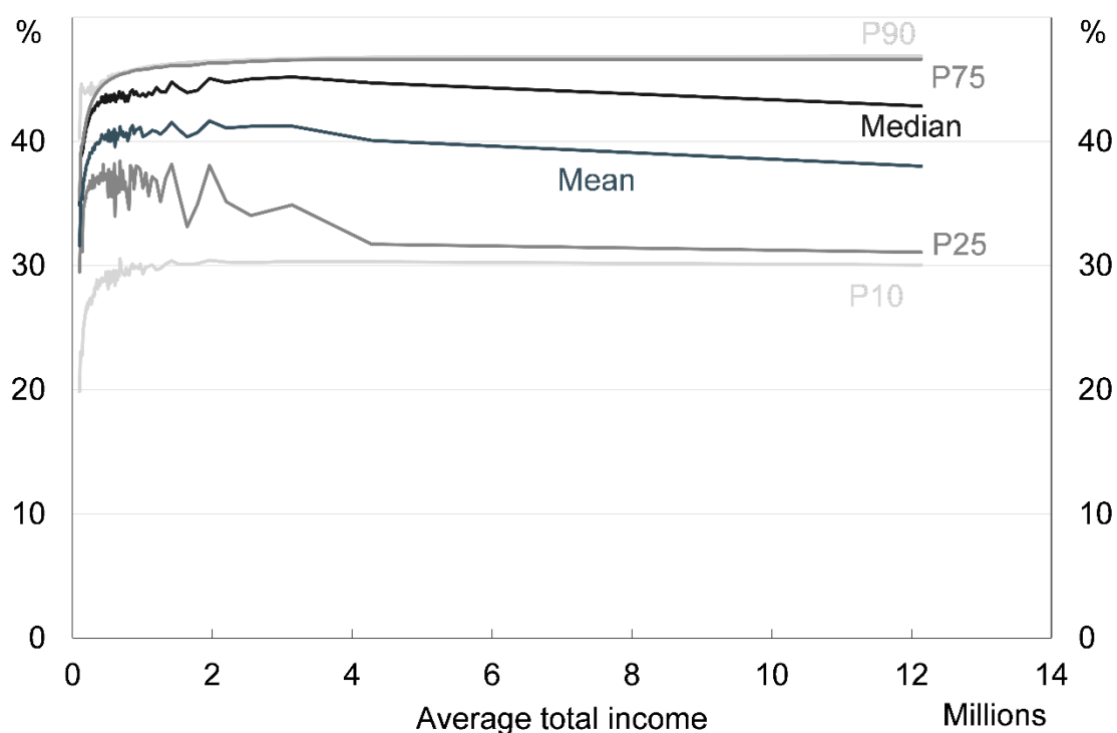
A large share of these gains are 'repackaged' income—money that would otherwise be taxed at up to 47% (Advani and Summers 2000b). By structuring the returns from work in the form of capital gains, individuals with high incomes are able to achieve much lower tax rates. However, as we describe below, opportunities for income repackaging vary substantially by income source, and so this is only possible for individuals with certain types of job or in certain industries.

This striking finding is driven by the extremely low (10%) tax rate on gains covered by Entrepreneurs' Relief. The scope of this relief has now been curtailed by the March 2020 budget, which reduced the lifetime cap on Entrepreneurs' Relief from £10 million to £1 million and renamed it 'Business Asset Disposal' (BAD) Relief. This reform will raise effective tax rates for those with the largest gains in future, although at 20%, these gains will still be taxed much less than earnings.

Effective tax rates vary substantially among those with the same total income

Excluding gains from our analysis, we see substantial variation in effective average tax rates at the top of the income distribution, even amongst individuals with similar levels of income. Looking at all those with more than £4 million in total income, EATRs were 8pp below the headline rate on earnings, on average. However, within this group, around half paid over 45%, whilst a quarter paid just 31%: the same EATR as someone earning £70,000. As we explain below, much of this variation is driven by differences in the composition of income taxed at different rates, as well as claims of deductions and tax reliefs.

Figure 3. Distribution (mean and percentiles) of effective average tax rates on income among those receiving more than £100k in income, 2016



Notes: Constructed using data on all reported taxable income going to individuals in 2016. All lines show the EATR on income only. "Mean" shows the average (mean) EATR at different levels of income. "Median" shows the median EATR at different levels of income, and "PXX" shows the XX percentile of EATR at any given level of income.

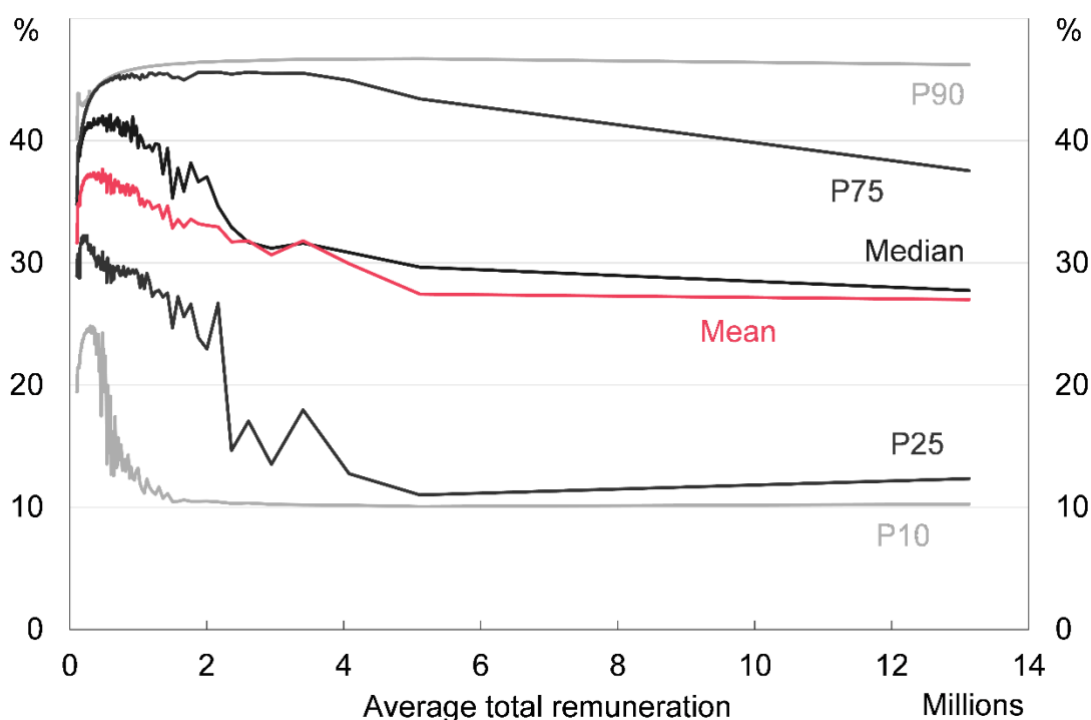
Source: Authors' calculations based on HMRC administrative datasets.

One in ten individuals receiving more than £1 million paid a lower effective average tax rate than someone earning just £15,000

When taxable gains are included, the variation in effective average tax rates is more extreme, due to the very low tax rates available on gains. One quarter of those with total remuneration below £2 million paid close to the headline average rate for earnings (around 45% at that level of income), but another quarter had EATRs less than 30%—equivalent to someone earning £60,000. **One in ten people with total remuneration over £1 million paid a lower effective average tax rate than someone earning just £15,000 (less than 11%); this proportion rises to one in four of those with total remuneration between £5 million and £10 million.**

These exceptionally low rates were driven by gains eligible for Entrepreneurs' Relief taxed at 10%, which is now capped at £1 million of qualifying gains. However, even if it were abolished entirely, EATRs for this group would still be the same as someone earning £26,000 (20%), given the low main rate of tax on capital gains (20%).

Figure 4. Distribution (mean and percentiles) of effective average tax rates on total remuneration among those receiving more than £100k in remuneration, 2016



Notes: Constructed using data on all reported taxable income and capital gains going to individuals in 2016. All lines show the EATR on income plus capital gains. “Mean” shows the average (mean) EATR at different levels of remuneration (income plus gains). “Median” shows the median EATR at different levels of remuneration, and “PXX” shows the XX percentile of EATR at any given level of remuneration.

Source: Authors' calculations based on HMRC administrative datasets.

Lower tax rates on capital gains largely benefit the richest

Even amongst those within the top 1% ranked by total remuneration, the benefit of lower tax rates on gains – compared with earnings and other forms of income – is highly concentrated at the very top. In 2017, 50% of all taxable gains going to the top 1% went to the top 5000 people (the top 0.01%). Looking specifically at gains taxed at the lowest rate (10%), that proportion is even higher at 54%.

Most of those towards the bottom of the top 1% – with total remuneration of around £128,000 – benefit very little from these low rates, because on average they receive 95% of their total remuneration in the form of taxable income rather than gains. Even

those at the bottom of the top 0.1% take the vast majority (84%) of their total remuneration as income. It is only in the top 0.01% (5,000 people) that gains dominate, with less than half (on average) of total remuneration taken as income.

Figure 5a. Distribution of income and gains attracting different tax rates by percentile of the top 1pc, scaled by total remuneration within bin, 2017

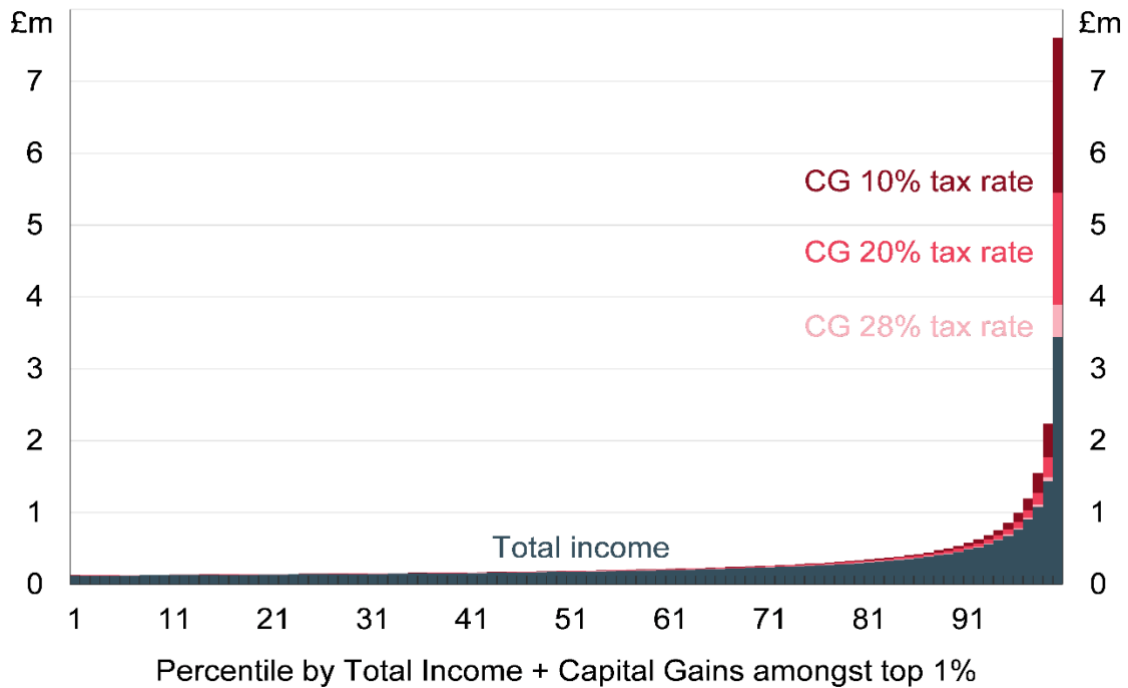
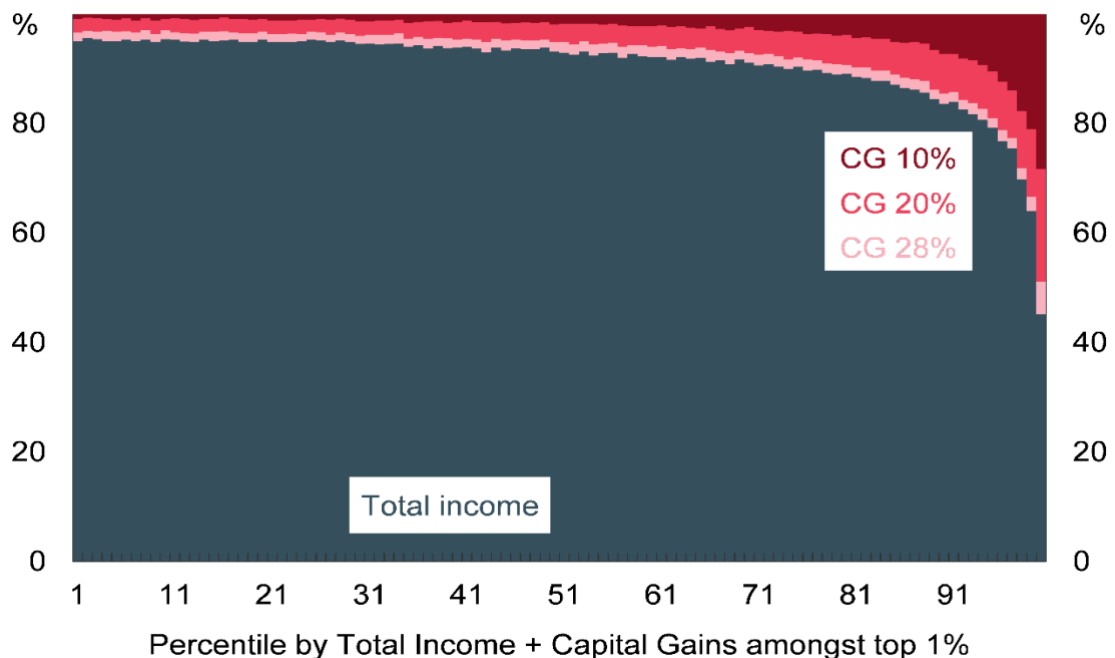


Figure 5b. Distribution of income and gains attracting different tax rates by percentile of the top 1pc as a share of remuneration within bin, 2017



Notes: Constructed using data on all reported taxable income and capital gains going to individuals in the top 1% of the UK 15+ population by total remuneration in 2017. Individuals are ranked by reported total remuneration and grouped into percentiles within the top 1%. Bars show mean remuneration by tax rate within each bin. In Panel (a) bar heights represent average total remuneration, in (b) they are normalised to 100.

Source: Authors' calculations based on HMRC administrative datasets.

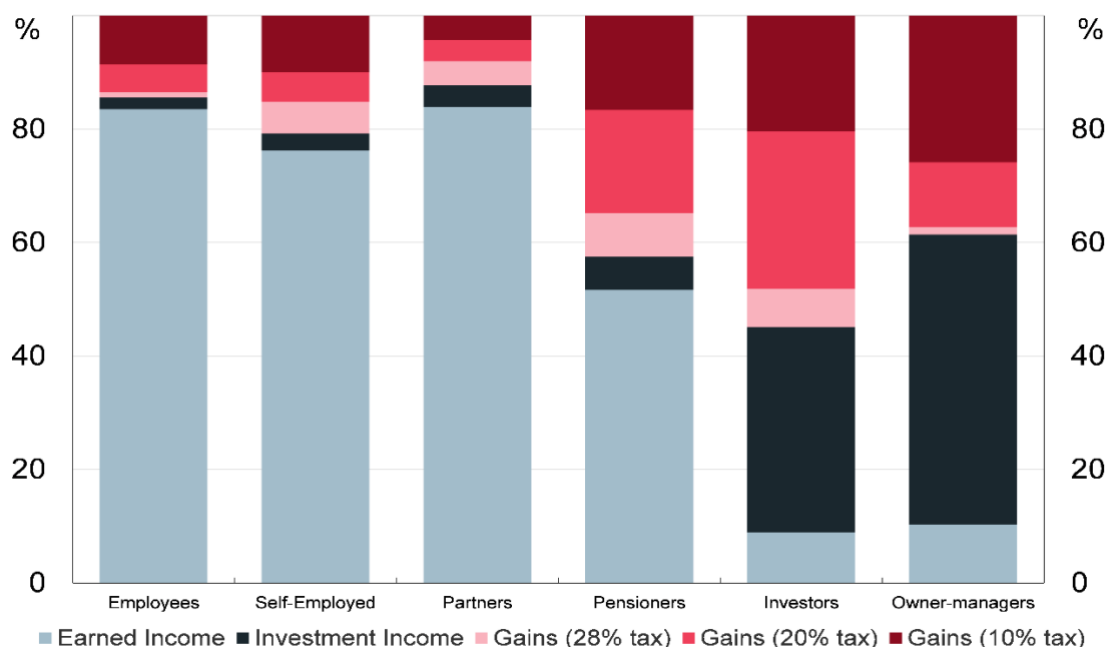
Lower tax rates on dividends and gains benefit individuals who can choose how to structure their remuneration

Employees have very little choice about how to structure their remuneration; almost all of the benefits provided by their employer, whatever their legal form, are taxed as earnings, meaning that they are liable to Income Tax at the main rate, plus National Insurance Contributions. By contrast, those who perform their work in other ways – particularly as business owners – and those who do not work at all but live off investments, have a lot more flexibility to take their remuneration in forms that are taxed at lower rates.

To investigate how the rich structure their remuneration, we look at all those in the top 1% by total remuneration and identify each individual's largest income source out of the following: employment income; self-employment trading profits; partnership trading profits; income from state and private pensions; and investment income (e.g. interest, rent, dividends). Where an individual's single largest income-source is dividends and they also report being a director of a closely-held company, we reallocate them to a distinct sixth category of business 'owner-manager'.

By definition, investors and owner-managers have investment income as their largest single source of remuneration. However, it is striking how little remuneration comes from earned income, taxed at an effective rate up to 47%. Among investors and owner-managers in the top 1%, only 10% of remuneration comes from earnings. For investors more than 50% of all remuneration is in the form of capital gains, and 20% is from the most lightly taxed form of gains. For owner-managers and pensioners in the top 1%, gains make up 40% of total remuneration, again with half of this (20%) of total coming from gains taxed at 10%.

Figure 6. Share of remuneration taxed at different rates, by main income source, among those in the top 1% by total remuneration, 2017



Notes: Constructed using data on all reported taxable income and capital gains going to individuals in the top 1% of the UK 15+ population by total remuneration in 2017. Individuals are categorised by their main income source. There is also a category for 'owner-managers': individuals who are directors of closely held companies and report investment as their main source. Bars show the (plutocratic) shares of remuneration taxed at different rates.

Source: Authors' calculations based on HMRC administrative datasets.

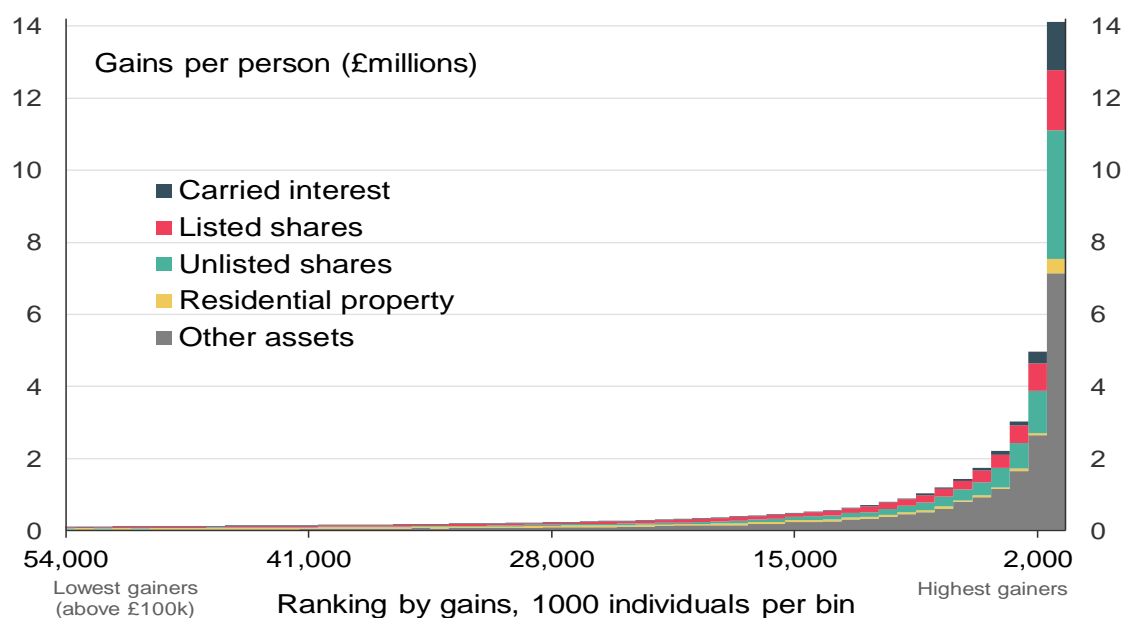
It is important to note, as we describe in Advani and Summers (2020b), that owner-managers are largely individuals who could otherwise be classed as self-employed, but have for tax purposes ‘incorporated’ (set up a company through which they trade). By doing this they can pay themselves in the form of dividends or gains instead of earnings. Flexibility to engage in this kind of ‘repackaging’ is more available to individuals in some industries: highly paid bankers cannot easily set up as independent bankers, while highly paid consultants can more easily set up independent consulting firms.

‘Carried interest’ gains benefit just 2000 fund managers who received £2.3 billion between them

Private equity managers receive a management fee based on the initial value of their fund, plus a performance fee known as ‘carried interest’ if the fund performs well. Both fees are in substance a reward for the fund manager’s personal services, effectively equivalent to a basic salary plus a bonus, respectively. But whereas the management fee is taxed as income, most carried interest is taxed as a capital gain at a rate of 28%. The tax treatment of carried interest has long been controversial (Seely 2010) and has recently been the subject of several complex reforms.

The total of £2.3 billion paid out in carried interest in 2017 went to just 2000 individuals, equivalent to over £1 million each.⁸ Over half (58%) of this went to individuals who received at least £7 million each in total taxable gains (placing them in the top 1000 ranked by gains); this is on top of management fees and any income-based carry, which are taxed as income. If all carried interest was taxed as income instead of capital gains it would increase tax rates on these receipts by 19 percentage points (including 2% NICs), raising up to £440 million in additional revenue on a static basis.

Figure 7. Breakdown by asset type for those receiving more than £100k in gains, 2017



Notes: Constructed using data on all reported taxable capital gains going to individuals in 2017. Individuals are ranked by reported capital gains and grouped into bins of 1000. Only individuals with gains over £100,000 shown here. Bars show mean gains by asset type within each bin. Bar heights represent average total gains.

Source: Authors' calculations based on HMRC administrative datasets.

⁸ This includes only carried interest taxed as a capital gain (at 28%), so excludes any income-based carry or sums caught by the Disguised Investment Management Fee rules.

How much revenue is at stake?

Our findings have important implications for how we might raise more revenue from the rich. Making precise revenue estimates is difficult because these depend on exactly how the reform is implemented and the extent of behavioural responses. However, we can estimate approximately how much revenue is at stake from the current policy choices to tax some forms of remuneration at lower rates and offer uncapped tax reliefs. These estimates provide an upper bound on the additional tax that could be raised under different policies.

Reforms to Income Tax

If everyone with taxable income (excluding gains) over £100,000 paid the headline average rate on earnings – which is already paid by over one quarter of top earners – we estimate that this reform alone could raise up to £8 billion. This estimate assumes that the tax rates on dividends, pensions, and other investment income are aligned with the rate on earnings (including employee but not employer National Insurance Contributions) and that all deductions and reliefs are removed, except for pensions and gift aid reliefs at the basic rate.

Whether or not this reform would be desirable depends firstly on how we think about the alignment of dividend rates. In most (but not all) cases, Corporation Tax will already have been paid at firm level before the dividends are paid out. On the other hand, employer National Insurance Contributions are paid at firm level on earnings. To align effective rates exactly, we would need to know the economic incidence of these two taxes; however, there are numerous difficulties with this, as we explain in Appendix A.

A second issue to consider is whether some additional deductions and tax reliefs should be retained. Our estimate assumes that individuals can continue to obtain relief ‘at source’ on gross pension contributions and charitable donations, at the basic rate of Income Tax (20%). We also assume retention of the Personal Allowance under the same conditions as at present i.e. tapered withdrawal above £100,000. Whilst it may be desirable to retain additional tax reliefs, there is currently a lack of evidence on which ones (if any) are effective and value-for-money (NAO, 2020).

Finally, it should be noted that this is a static revenue estimate, meaning that it does not take account of potential behavioural responses to the reform. Past reforms such as the 50p Income Tax rate (which applied from 2011-2013) demonstrate that the rich can be highly responsive to tax changes; however, such responses often take the form of income-shifting and other types of avoidance (Browne and Phillips 2017), rather than real responses such as migration or labour supply (Kleven, Munoz, Landais and Stantcheva 2020; Martinez, Saez and Siegenthaler 2020).

Alignment of Capital Gains Tax

If everyone with total remuneration (including gains) over £100,000 paid the headline average rates on earnings, we estimate that this reform could raise a further £12 billion, bringing in up to £20 billion in total. This estimate assumes that all taxable income faces the same effective rate as earnings, as above, and that Capital Gains Tax rates are aligned with the taxpayer’s marginal Income Tax rate plus 2% National Insurance Contributions.

There is widespread support for equalising the tax treatment of income and gains, both amongst economists (Mirrlees et al 2011) and the general public (Tax Justice UK 2020). It is also not without precedent in the UK: this reform would mark a return to the approach adopted by Nigel Lawson as Conservative Chancellor in 1988, who aligned the rates of Income Tax and Capital Gains Tax subject to an indexation allowance (based on RPI) for gains.

As before, our estimates are on a static basis and so do not take account of behavioural responses. Avoidance would be made more difficult by the equalisation of rates across all sources of remuneration. However, if taxpayers were pre-warned of the reform, they might bring forward realisations; or if they did not believe that the reform would be permanent, they might defer them. There would be an increased incentive to defer realisations until death, unless forgiveness on death was also removed. The impact on investment and other real behaviours is more difficult to predict.

Recent reforms

The revenue estimates in this section and the next are based on tax data from 2016. Since then, two reforms have already moved the tax system some way in the direction we have suggested. From April 2016, the effective rate on dividends was increased by 7.5%, up to a top rate of 38.1%. From March 2020, Entrepreneurs Relief, which provided a 10% rate of Capital Gains Tax, was capped at £1 million in lifetime qualifying gains, down from £10 million. These two reforms mean that additional revenue would be reduced compared with our 2016 estimates.

In 2016, £39 billion in dividends were reported by individuals who received over £100,000 in total income, although this was unusually high.⁹ This implies that around £2.9 billion of the additional revenue we estimate above has now already been legislated. In the same year, £17.4 billion in gains qualifying for Entrepreneurs Relief (ER) were reported by individuals who received over £1 million in ER gains. This implies around £1.7 billion in revenue already legislated. But even accounting for these recent reforms, we estimate that around £15 billion remains at stake.

How much could an Alternative Minimum Tax raise?

An *Alternative Minimum Tax* (AMT) is a minimum tax rate based on the total amount of income (or total remuneration) that an individual reports, before applying any deductions or reliefs. It ensures that while individuals can continue to claim various deductions and reliefs, these cannot be stacked on top of each other in a way that takes the taxpayer's effective average tax rate below the AMT rate. In other words, it sets a 'floor' on the proportion of an individual's income (or total remuneration) that must be paid in tax.

Existing approaches

The United States already operates an AMT, although it only applies to taxable income, not to gains. In 2017, the AMT applied a minimum tax rate of 28%, compared with a headline top Income Tax rate of 39.6%. The tax applied to 3% of all households, including 24% of households with income above \$1 million (Tax Policy Centre 2020). In 2017, it raised a total of \$38 billion, or 2.6% of Income Tax revenue; but its scope has now been curtailed by the tax reforms introduced by Donald Trump ('Tax Cuts and Jobs Act'), effective from 2018.

The UK already has a limited policy for ensuring that taxpayers cannot cumulate tax reliefs entirely without restriction. In 2013, the Coalition Government introduced a cap on the amount of certain Income Tax reliefs that could be claimed up to a limit of £50,000 or 25% of 'adjusted total income', whichever is greater (HMRC 2020b). However, this cap currently only covers a limited range of reliefs and does not address the low EATRs arising from remuneration taken in the form of dividends or gains.

⁹ Due to forestalling ahead of the pre-announced increase in rate. See further OBR 2017.

Figure 8a. Revenue that could be raised by an Alternative Minimum Tax on income at different tax rates

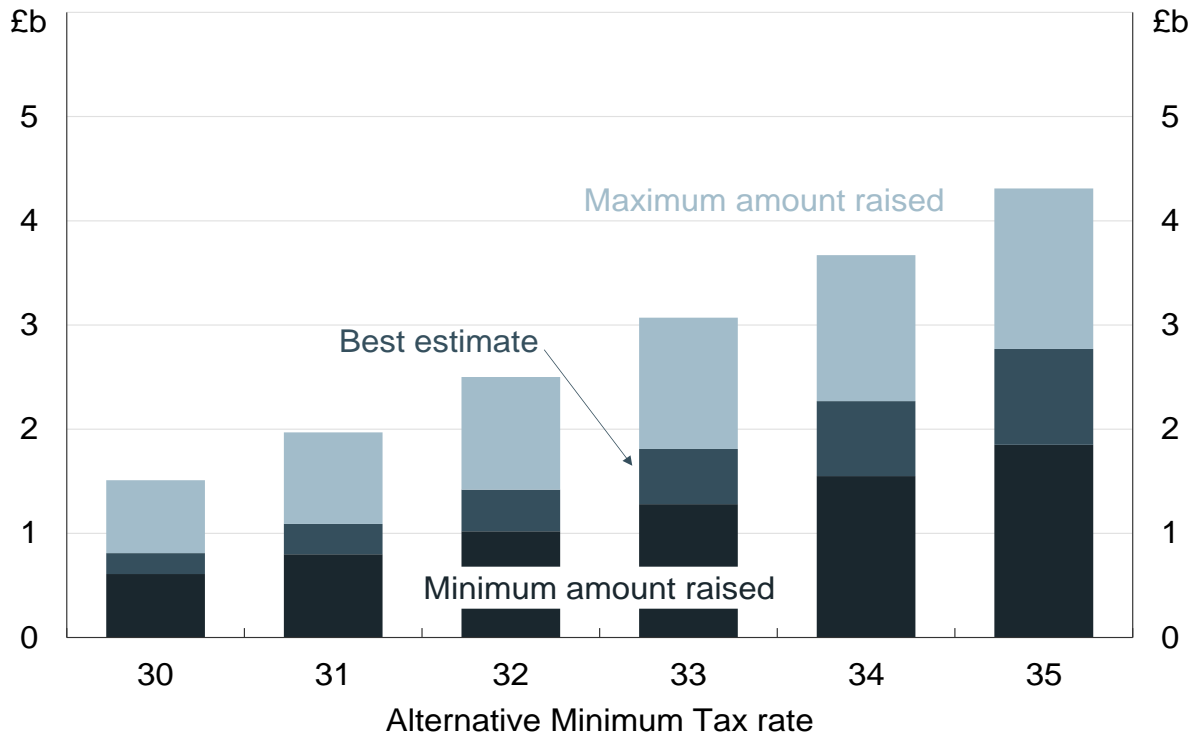
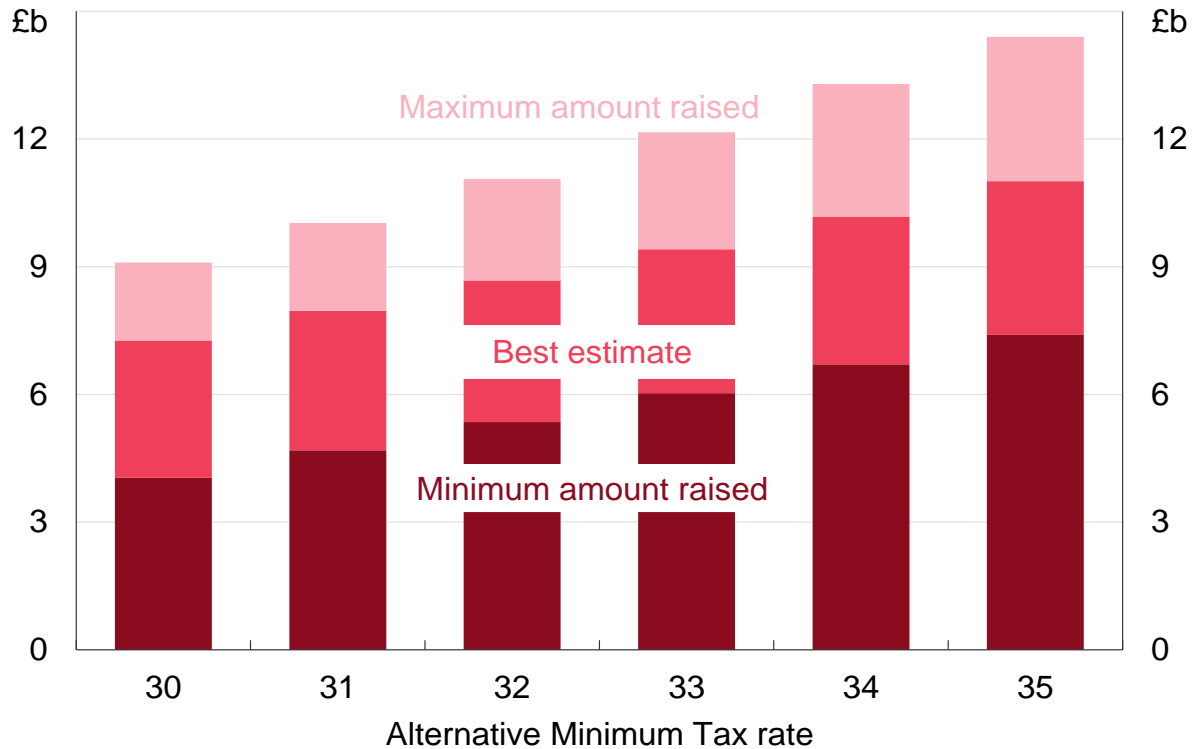


Figure 8b. Revenue that could be raised by an Alternative Minimum Tax on total remuneration at different tax rates



Notes: Constructed using data on all reported taxable income and capital gains going to individuals in 2016. Data were aggregated into quantiles of income/remuneration before constructing these figures. Minimum and maximum come from assuming all individuals within a given quantile have the lower/upper bound EATR for that quantile. Best estimate comes from interpolation within the quantile.

Source: Authors' calculations based on HMRC administrative datasets.

Revenue from an AMT

If the UK introduced an AMT on total taxable income (excluding gains) above £100,000 at a rate of 30%, this could raise around £1 billion, catching the small number of individuals with EATRs below this rate. An Alternative Minimum Tax set at 35%, applying only to income, could raise around £3 billion. This reform goes less far than equalising dividend rates and removing all deductions and reliefs, whilst limiting the extent to which any individual can combine these to achieve the lowest rates.

If taxable capital gains were also brought within the scope of an AMT, a 30% rate could raise £7 billion. **An Alternative Minimum Tax set at 35%, applying to total remuneration (income plus gains), could raise around £11 billion.** This is more than half the revenue that could be achieved from a full equalisation of rates and removal of deductions and reliefs.

For comparison, raising an equivalent sum (£11 billion) by increasing the existing headline rates of Income Tax would require:

- An extra 2 percentage points on the basic rate (to 22%); or
- An extra 5 percentage points on both the higher rate (to 45%) and the additional rate (to 50%); or
- An extra 12 percentage points on the additional rate (to 57%)

All of these revenue estimates, for both the Alternative Minimum Tax and increases to headline Income Tax rates, are our central estimates calculated on a static basis. In practice, all would be affected by behavioural responses. However, responses to an AMT would almost certainly be less than for any of the changes to headline rates, because the policy is specifically designed to minimise the scope for avoidance.

Conclusion

In the coming years, the pressure to rebuild public finances and to place crucial public services on a sustainable footing will inevitably require politicians to make tough choices about who should pay more tax. It is important that these debates are not framed exclusively through the prism of headline rates. What matters – both for revenue and fairness of the tax system – is effective rates. We have shown that the effective average tax rates paid by the UK's richest individuals are often much lower than the headline rate on earnings, and also that there is substantial variation in EATRs even amongst those on similar levels of remuneration.

Instead of asking 'can the rich pay more?', a better question may therefore be: 'who amongst the rich is not paying their fair share?' In reframing the debate in this way, it is nevertheless important not to fall into the trap of blaming individual taxpayers. Our findings are not – for the most part – driven by complex tax avoidance schemes or taxpayer bad behaviour. Instead, the disparities that we identify are baked into our tax system, through political choices: first, taxing similar forms of remuneration in different ways, and second, granting a raft of uncapped tax reliefs without taking adequate steps to check their effectiveness (NAO 2020).

It is surely time to revisit these choices, not least given the significant revenues at stake. We have identified the maximum that could be raised from the UK's richest individuals without increasing headline tax rates on earnings. Such a reform would have the merit of raising substantial revenue from those best able to afford it, without raising taxes on those who already pay the highest shares. When difficult decisions on tax look certain to be required one way or the other, this path seems a sensible way of ensuring that all those at the top are paying their fair share after the crisis.

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Appendix A: Methodology

This appendix explains the key methodological choices that we adopt in calculating effective average tax rates (EATRs) in this report. We first discuss our approach to incidence, a topic that has been the subject of recent controversy in the tax and inequality literature (Saez & Zucman 2019, Kopczuk 2019). We then highlight two further complexities in calculating EATRs – the treatment of tax reliefs and foreign taxes – that have so far received less attention. Finally, we discuss the implications of unreported income and capital gains for our analyses.

A.1 Incidence

There is an important distinction between ‘statutory’ and ‘economic’ incidence. The statutory incidence of a tax depends on the legal structure of the tax system. Statutory incidence is on whichever legal person is liable to pay the tax according to the relevant legislation; this could be an individual or a company. In other words, it is on whoever is responsible for paying over the tax to the tax authority, as a matter of law.¹⁰ Similarly, the statutory incidence of a tax relief is on whoever is legally entitled to the benefit.

By contrast, the economic incidence of a tax reflects the idea of who ‘really’ pays, which may not be the same as the legal person liable to pay. First, economic incidence can only ever be on individuals, never companies; consequently, we must always look through a company’s legal form to its individual shareholders, workers, suppliers or customers etc. Second, economic incidence requires a counterfactual analysis, specifically: by how much would an individual be better/worse off if the tax in question were decreased/increased? Economic incidence therefore relies on causal identification of behavioural responses to the tax.

As a matter of pure principle, we would agree that economic incidence is the most relevant concept for thinking about the effects of the tax system on people’s living standards.¹¹ However, as we explain below, there are significant practical difficulties with implementing EATR estimates based on economic incidence. Given these difficulties, we think that statutory incidence provides a more transparent benchmark, which we complement by testing sensitivity to alternative assumptions about incidence.

Difficulties with economic incidence

Whilst economic incidence is the appropriate concept to use in principle, its estimation in practice gives rise to several difficulties. Many of these are already well-documented (for a general discussion see Fullerton and Metcalf, 2002). We outline two standard difficulties below, adding a third regarding other data challenges when relying on economic incidence to estimate EATRs. Our overarching point is that the economic incidence of a tax cannot be expressed as a single parameter appropriate for estimating EATRs; any such estimates inevitably rely on numerous simplifying assumptions, and those assumptions often lack transparency.

¹⁰ Sometimes more than one legal person may be liable as a matter of law. For example, s6(3) Social Security Contributions and Benefits Act 1992 provides that employees are liable for Class 1 primary (‘employee’) NICs and employers are liable for Class 1 secondary (‘employer’) NICs. In most circumstances employers are ‘liable in the first instance to pay also the earner’s primary contribution, on behalf of and to the exclusion of the earner’ (Schedule 1). However, since the employee is the legal person ultimately liable to pay Class 1 primary contributions (in the event that the employer does not), we treat the statutory incidence as being on the employee; this is also consistent with common perception, since primary but not secondary Class 1 NICs are shown as a deduction on employees’ payslips.

¹¹ We do not rely on the recent suggestion by Saez and Zucman (2019) that statutory incidence is superior in principle for the purpose of assessing incidence as a snapshot (distinct from assessing effects of reform).

Empirical uncertainty

Estimating economic incidence involves assigning the cost of a tax to different groups by estimating the amount by which those groups would be worse/better off if the tax was increased/decreased. For example, to assess the economic incidence of Corporation Tax on shareholders, we need to know by how much the net dividends that shareholders receive would decrease if this tax was increased. Economic incidence requires a causal estimate of effects of changes in the tax rate e.g. the extent to which firms would raise prices, reduce wages or employment, or reduce dividend payments, in response to an increase in Corporation Tax.

These causal estimates are subject to significant empirical challenges. Credible estimates require a quasi-experimental setting, but such settings are rarely available. This explains why very few studies have so far been conducted in the UK.¹² There is one recent study of the economic incidence of National Insurance Contributions (Adam, Roantree & Phillips 2019) and another of Corporation Tax (Arulampalam, Devereux & Maffini 2016). Whilst these studies provide useful evidence on economic incidence, they also acknowledge substantial uncertainty.

Heterogeneity

There is likely to be significant heterogeneity in economic incidence between individuals. For example, the incidence of Corporation Tax is very likely to be different for shareholders of large publicly listed firms compared with sole owner-managed businesses (such as personal services companies); it is also likely to vary by industry, and within industry depending on the market power of the firm, etc. For example, there is evidence that under some specific conditions, employers may even share the economic incidence of Income Tax, which is conventionally assumed to fall entirely on employees (Kleven, Landais, Saez & Schultz 2014).

This heterogeneity is particularly problematic if estimates of economic incidence are being used to assess how EATRs vary by income or total remuneration. It is plausible that systematic differences in behavioural responses (and hence economic incidence) between individuals are correlated with income. Accordingly, we doubt whether economic incidence can satisfactorily be expressed as a single parameter for the purpose of assessing EATRs. However, it is not straightforward to estimate multiple parameters that account for variation in economic incidence by income or remuneration, as would be required to overcome this problem. Any such estimates would also be estimated with even larger uncertainty than existing single-parameter studies.

Data challenges

Departing from statutory incidence in favour of economic incidence raises additional data challenges. As already noted, statutory incidence tracks the legal structure of the tax system and hence also administrative boundaries. By contrast, tax data is not collected or linked in ways that readily facilitate analyses based on economic incidence. In particular, in the UK, data on all taxes levied at the personal level (Income Tax, Capital Gains Tax, National Insurance Contributions) can be linked relatively straightforwardly, whereas it is not currently possible comprehensively to link individual personal tax records to data on taxes paid at the corporate level.

This lack of data availability poses a major challenge for allocating Corporation Tax to individuals. Even if we supposed (implausibly) that 100% of the economic incidence of Corporation Tax was on shareholders, we would still need to be able to determine the amount of Corporation Tax actually paid by each firm and then attribute these taxes to the firm's shareholders in proportion to their shareholdings. In the absence of

¹² There are additionally studies of the economic incidence of payroll taxes and corporate taxes in other countries, but these raise issues of external validity, particularly where other aspects of the tax system or economic setting are materially different from the UK.

linked personal and corporate level tax microdata, it would be necessary to rely on broad assumptions about the taxes paid at corporate level.

There are several reasons why these assumptions may be wrong. For dividends paid by UK companies, a natural starting point may be to assume a tax rate at corporate level equal to the UK Corporation Tax headline rate (currently 19%). However, this approach suffers from precisely the problem that we identify in this paper i.e. that effective rates can often be much lower than headline rates. Bilicka (2019) finds evidence that reported taxable profits are often significantly lower than accounting profits. Moreover, before 2015, the UK had a different Corporation Tax rate for firms with small profits, which was set lower than the main rate.

For dividends paid by foreign companies, there is no information on the amount of tax (if any) already paid at the corporate level, prior to distribution of dividends to UK residents. For example, we know that some foreign firms (e.g. Apple and Google) pay almost no corporate tax. It would therefore clearly be a mistake to assume that dividends paid by these firms to UK residents were net of 19% tax already paid at the corporate level. However, since dividend income (whether UK or foreign) is not itemised company-by-company on tax returns, it is difficult to know what adjustment to make for this, even at an aggregate (let alone individual) level.

Statutory incidence is transparent

Statutory incidence has the significant merit of being transparent and easily understood. It relies on far fewer assumptions than economic incidence and is not subject to any empirical uncertainty. EATRs calculated on the basis of statutory incidence can be interpreted using a single reference point (the tax legislation) that can be applied relatively straightforwardly. We accept that economic incidence is the preferable concept in principle; however, attempts to apply it in practice come at the significant price that it is often very difficult for readers to assess transparently how much the results depend on each of the various issues outlined above.

We therefore base our main analysis on statutory incidence but supplement this by documenting the sensitivity of our resulting EATR estimates to alternative assumptions about incidence (see Appendix B). Looking at each tax in isolation, statutory incidence typically provides a bound on economic incidence, since it assigns 100% of the incidence of a tax to one particular group (e.g. employers) rather than contemplating that the incidence may be split between multiple groups. We therefore document how EATRs would differ if the opposite extreme assumption were taken: for example, if 100% of Corporation Tax and employer NICs were assigned to individual shareholders/employees.

Statutory incidence is consistent with current inequality statistics

The main inequality statistics currently published for the UK are all based on statutory incidence.¹³ For example, in both the ONS and WID income series, pre-tax income is measured as the earnings received after employer NICs but before employee NICs have been deducted; dividend income is measured as the amount distributed after Corporation Tax has been paid. Post-tax income is measured after all personal direct taxes have been deducted. We think that it is useful to maintain consistency with this approach when calculating EATRs, because an EATR is simply an alternate way of expressing the relationship between an individual's pre- and post-tax income.

A.2 Tax reliefs

We attribute tax reliefs using the same approach as for taxes i.e. based on their statutory incidence. For Gift Aid Relief (gifts to charity) and Pension Relief

¹³ Office for National Statistics, Effects of Taxes and Benefits on UK Household Income; World Inequality Database, fiscal income series.

(contributions into a pension scheme), 'basic rate' relief equal to 20% of the gross gift or pension contribution is given 'at source', meaning that these sums are transferred from HMRC direct to the charity or pension provider. Following statutory incidence, we do not attribute these benefits to individuals i.e. this element of the relief is not counted as reducing an individual's EATR. By contrast, the additional tax relief on gifts and pension contributions for 'higher' and 'additional' rate taxpayers, is claimed direct by individuals through their tax return and so we do include this element of the relief in the EATR calculation.

Higher/additional rate relief is available to all those with total income above the higher rate threshold (currently £50,000). Consequently, all of the individuals covered by our results are entitled to tax relief on gifts and pension contributions claimed through their tax return, as well as the basic rate relief provided at source. If gifts and pension contributions as a share of income increase as income increases, then our approach of ignoring basic rate relief (following statutory incidence) will overstate mean EATRs at the highest income levels by more than at lower levels, compared with an approach based on economic incidence that would attribute this relief to individuals and so reduced the net tax reported as having been paid.

A.3 Foreign taxes

Broadly there are two possible approaches to the treatment of foreign taxes when calculating EATRs: (1) ignore foreign taxes paid ('UK-only' approach) or (2) include foreign taxes paid ('worldwide' approach). The UK-only approach is appropriate for assessing each individual's contributions to UK tax revenues, but the worldwide approach is more suitable for assessing an individual's personal 'tax burden' (i.e. the amount of tax they are paying overall). Whichever approach is chosen, the approach should be applied consistently to both the numerator and denominator i.e. if the numerator excludes (includes) foreign taxes paid, then the income/gains to which that tax relates should also be excluded (included).

We adopt the worldwide approach, as far as possible given data limitations. In practice, this means that we include all foreign taxes that an individual has paid, provided that they claimed Foreign Tax Credit Relief (FTCR) in the UK. FTCR is available in most cases where the UK has a Double Tax Treaty with the foreign country that deduced the tax. In the relatively few cases where FTCR is not available, the income and gains are reported in the UK net of the foreign tax already paid; consequently, we are unable to account for these taxes in our numerator, although nor do we include this element within the gross income/gains in our denominator.

A.4 Unreported income and capital gains

Our measure of EATRs only captures taxable income and taxable capital gains. There are several important additional sources of receipt that are not subject to Income Tax or Capital Gains Tax and so are missing from our measure even though they fall within a comprehensive definition of income. The main sources of 'missing income' are set out in detail by Summers (2019). They include, for example, all income from tax-exempt investments (e.g. ISAs), the foreign income/gains of non-domiciled residents ('non-doms'), retained profits held within firms (unless realised as a capital gain), inheritances and gifts, and income that is underreported due to tax avoidance schemes and evasion.

The main sources of 'missing gains' are realised gains on individual's main homes, which are not liable for Capital Gains Tax, and any gains on assets held within ISAs or other tax-exempt products. Additionally, there are various reasons why taxable gains may not be reported due to the amount, timing or nature of the realisation. Gains below the Annual Exempt Amount (currently £12,000) are typically not reported. Any gains that are realised on death, or after an individual has ceased to be UK tax resident, or through a disposal to a charity, are also not taxable in the UK.

Ideally, we would include all of this missing income and gains in the denominator (i.e. total income/remuneration) that we use to calculate EATRs. Excluding these missing sources undoubtedly biases EATRs upwards because they are not subject to tax so the effective tax rate on these sources is zero. The impact on the distribution of EATRs by income/remuneration depends on whether missing income and gains makes up a larger share of total incomes/remuneration for those on the highest taxable incomes. There is some evidence to indicate that this is the case (Summers 2019), but further work is required in this area using new data sources.

Appendix B: Robustness to incidence assumptions

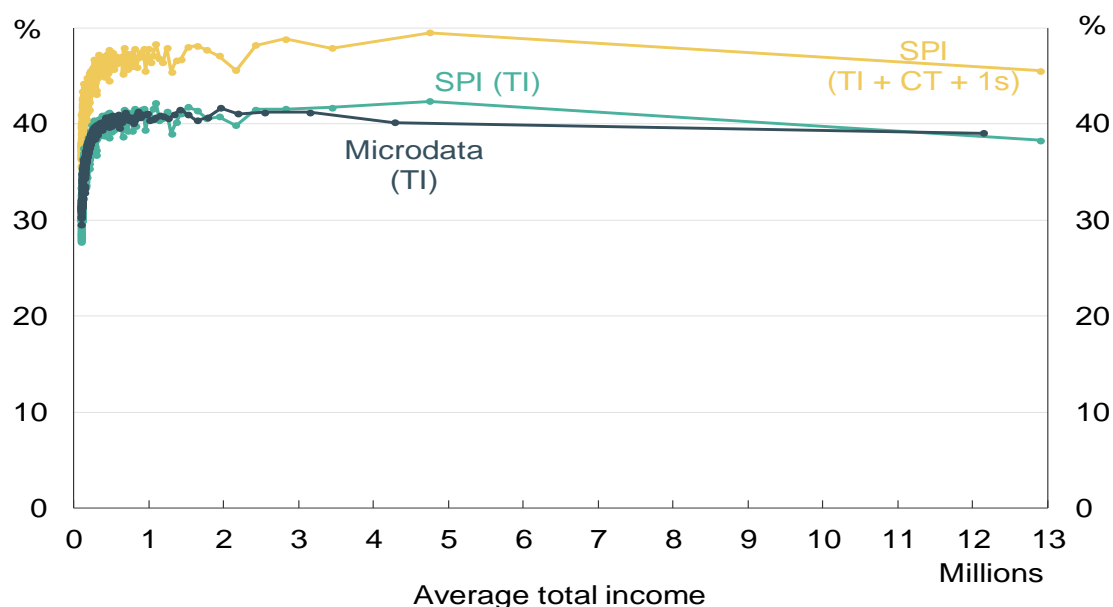
Our main analysis in this report assumes statutory incidence when estimating individuals' effective average tax rates and comparing these with headline rates. In Appendix A, we set out several practical reasons why we think this is the most transparent and appropriate benchmark for estimating EATRs, while acknowledging that economic incidence is in principle the preferred concept for understanding the impact of the tax system on living standards. Here we test the robustness of our findings to some alternative (extreme) assumptions about incidence.

Using data from HMRC's Survey of Personal Incomes (SPI) Public Use Tape for tax year 2015-16, we re-estimate EATRs based on the assumptions that:

- (1) Corporation Tax is 100% incident on individuals who receive dividends (shareholders). We gross up dividend income to account for the UK Corporation Tax assumed to have been paid at firm level (20% of taxable profits) and add this tax to the total tax paid at personal level.
- (2) Employer National Insurance Contributions (Class 1s NICs) are 100% incident on employees. Again, we gross up earnings from employment to account for the employer NICs (13.8% of taxable income) and add this tax to the total tax paid at personal level.

Figure B1 shows that our results (based on statutory incidence) using SPI public use data are very similar to those using the more granular administrative tax microdata available in HMRC Datalab. When we assign both Corporation Tax and employer NICs to individual shareholders/employees, this results in a level shift upwards of EATRs by about 7pp, but it does not affect the overall trend.

Figure B1. Effective average tax rates on income among those receiving more than £100k in income under different assumptions about incidence, 2016



Notes: Constructed using data on all reported taxable income going to individuals in 2016. "Microdata (TI)" shows the EATR assuming statutory incidence on income only based on data from the HMRC Datalab, as displayed in Figure 1. "SPI (TI)" shows the EATR assuming statutory incidence on income only based on the SPI data. "SPI (TI+CT+1s)" shows the EATR on income adding in Corporation Tax and employer (i.e. Class 1s) NICs, based on the SPI data.

Source: Authors' calculations based on HMRC administrative datasets and the Survey of Personal Incomes.

Figure B2 shows separately the percentage point impact on EATRs of adding Corporation Tax and employer NICs separately, as well as adding both together. Corporation Tax has a larger impact on mean EATRs at higher incomes, while employer NICs is more important at (relatively) lower incomes. Together they have an average impact of about 7pp on EATRs, although the effect is slightly higher at relatively lower incomes.

Figure B2a. Impact on EATR of including Corporation Tax and/or employer NICs among those receiving more than £100k in income, 2016

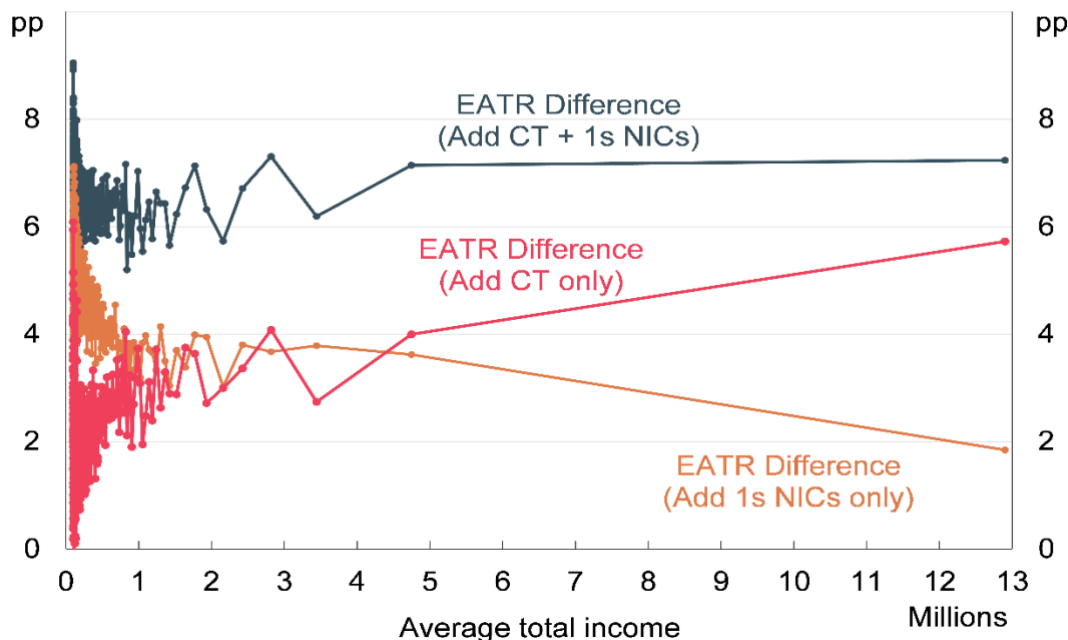
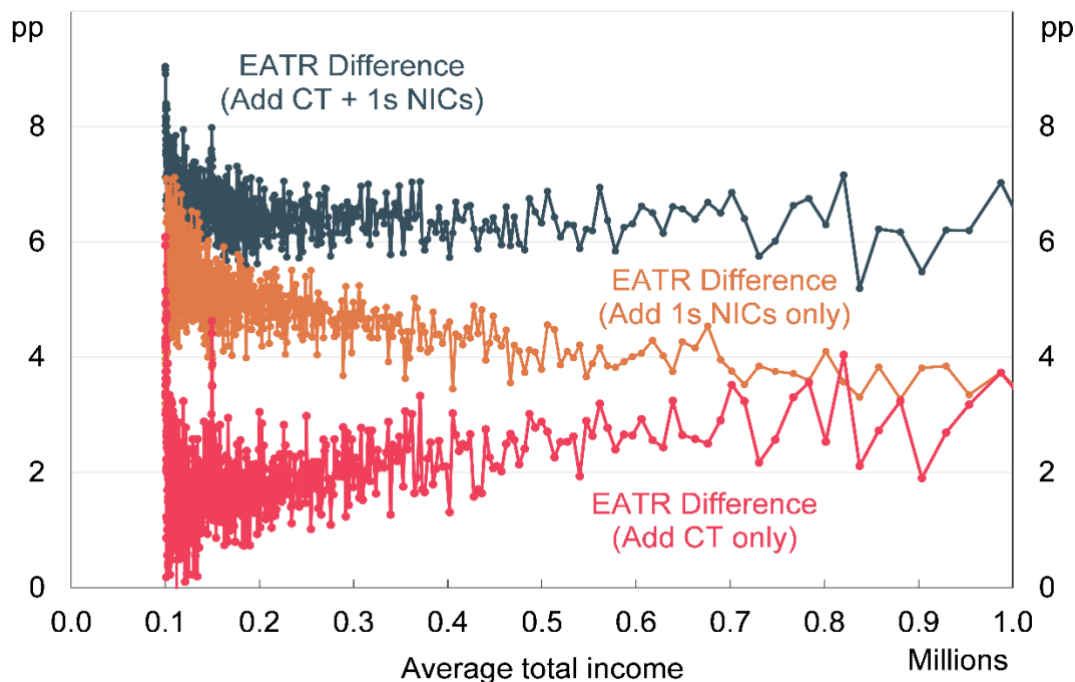


Figure B2b. Impact on EATR of including Corporation Tax and/or employer NICs among those receiving between £100k and £1m in income, 2016

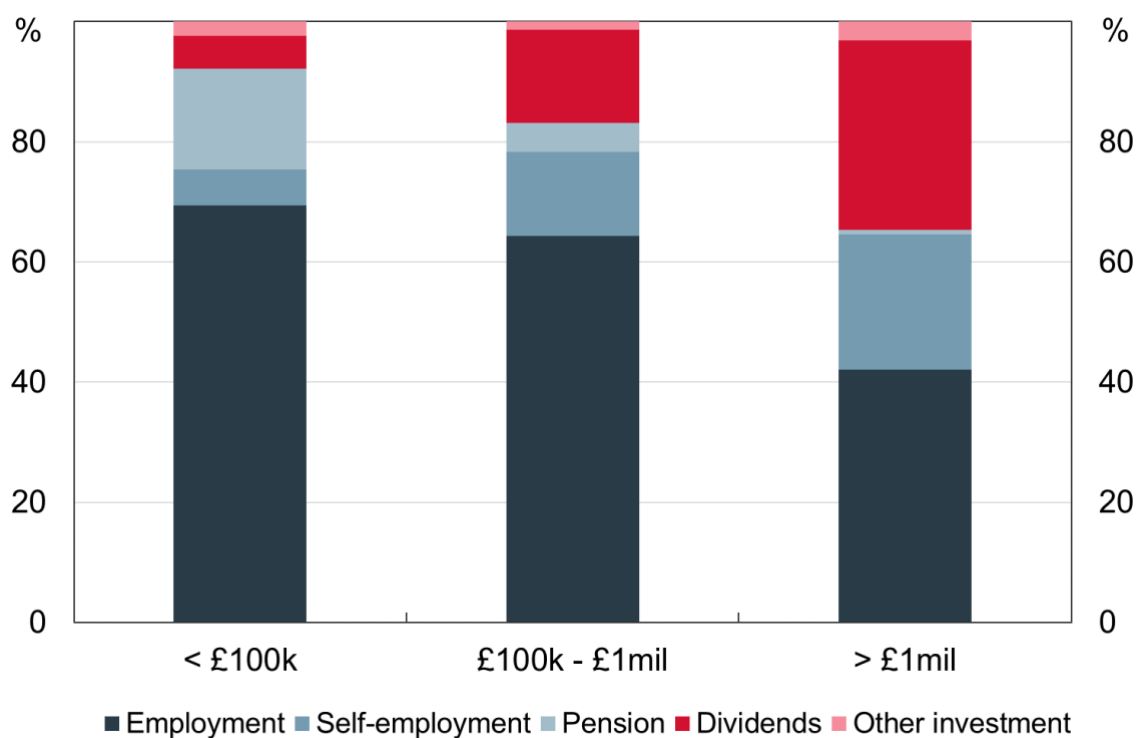


Notes: Constructed using data on all reported taxable income going to individuals in 2016. Lines show effects of adding only employer (i.e. Class 1s) NICs, only Corporation Tax, or both on EATRs. The combined effect is not obtained by summing the separate effects because the denominator changes.

Source: Authors' calculations based on the Survey of Personal Incomes.

Appendix C: Supplementary figures and tables

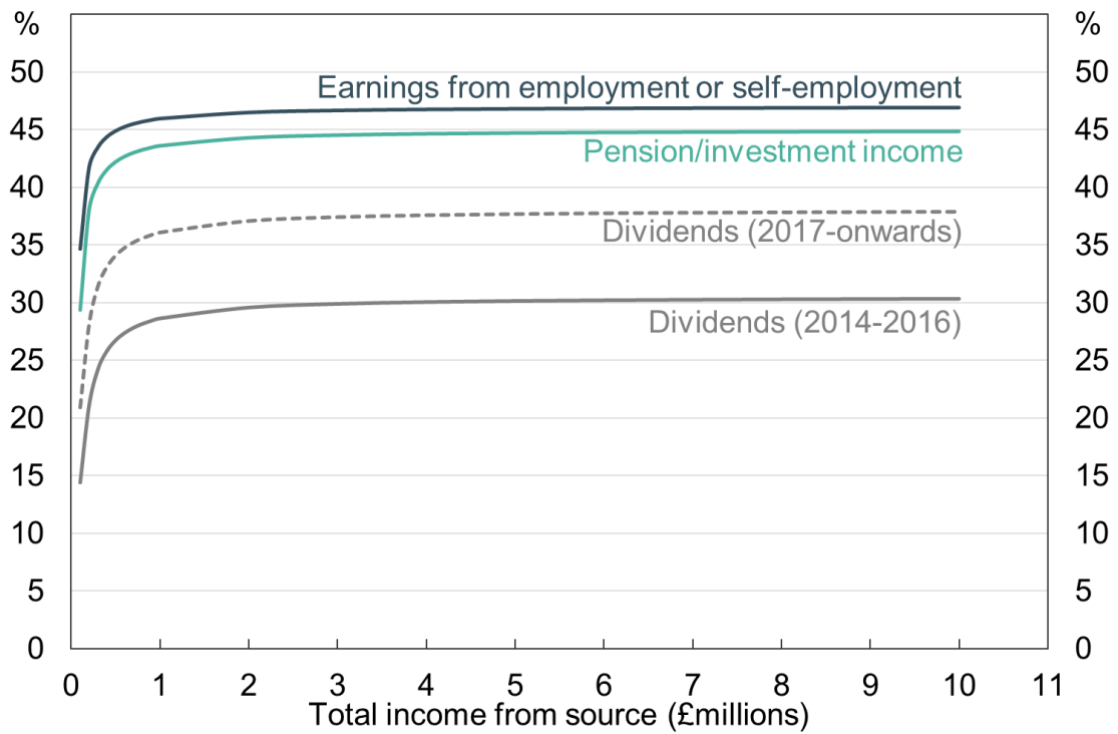
Figure C1. Composition of aggregate taxable income amongst taxpayers with <£100k, £100k-£1m and >£1m each in total income, 2016



Notes: Constructed using HMRC tabulations of aggregate taxable income decomposed by type of income, for all taxpayers by range of total income, for tax year 2015-16. 'Pension' includes income from both state and private pensions. 'Other investment' includes income from property, interest and miscellaneous investment sources.

Source: Authors' calculations based on the HMRC Personal Incomes Statistics, Tables 3.6 and 3.7.

Figure C2. Headline average tax rates for different income sources, 2014-2020



Notes: Average tax rates calculated using headline rates assuming Personal Allowance is claimed (until withdrawn) but no other deductions or tax reliefs. Dividends line for 2014-2016 shows effective rate after accounting for dividend tax credit.

Source: Authors' calculations based on statutory rates.

Table C3. Headline average tax rates on total income between £10k-£10m, 2016

Pre-tax income (£)	Total tax (£)	Post-tax income (£)	Average tax rate (%)
10,000	233	9,767	2.3
11,000	431	10,569	3.9
12,000	751	11,249	6.3
13,000	1,071	11,929	8.2
14,000	1,391	12,609	9.9
15,000	1,711	13,289	11.4
16,000	2,031	13,969	12.7
17,000	2,351	14,649	13.8
18,000	2,671	15,329	14.8
19,000	2,991	16,009	15.7
20,000	3,311	16,689	16.6
21,000	3,631	17,369	17.3
22,000	3,951	18,049	18.0
23,000	4,271	18,729	18.6
24,000	4,591	19,409	19.1
25,000	4,911	20,089	19.6
26,000	5,231	20,769	20.1
27,000	5,551	21,449	20.6
28,000	5,871	22,129	21.0
29,000	6,191	22,809	21.3
30,000	6,511	23,489	21.7
35,000	8,111	26,889	23.2
40,000	9,711	30,289	24.3
45,000	11,570	33,430	25.7
50,000	13,670	36,330	27.3
60,000	17,870	42,130	29.8
70,000	22,070	47,930	31.5
80,000	26,270	53,730	32.8
90,000	30,470	59,530	33.9
100,000	34,670	65,330	34.7
110,000	40,870	69,130	37.2
120,000	47,070	72,930	39.2
130,000	51,514	78,486	39.6
140,000	55,714	84,286	39.8
150,000	59,914	90,086	39.9
200,000	83,414	116,586	41.7
250,000	106,914	143,086	42.8
300,000	130,414	169,586	43.5
400,000	177,414	222,586	44.4
500,000	224,414	275,586	44.9
1,000,000	459,414	540,586	45.9
2,000,000	929,414	1,070,586	46.5
4,000,000	1,869,414	2,130,586	46.7
5,000,000	2,339,414	2,660,586	46.8
10,000,000	4,689,414	5,310,586	46.9

Notes: Average tax rates for tax year 2015-16 calculated using headline rates assuming all income is earnings from employment, and Personal Allowance is claimed (until withdrawn) but no other deductions or tax reliefs. 'Total tax' includes Income Tax and employee (i.e. Class 1p) NICs.

Source: Authors' calculations based on statutory rates.