



Progressivity and Inequality

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COLLECTION:
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ABSTRACT

The concept of justice in taxation has been associated with the concepts underlying income inequality and its measurement. I take a fresh look at this connection in the light of recent UK experience and of results in the field of inequality measurement. This is developed in the context of several alternative empirical indicators of economic well-being and alternative approaches to characterising inequality comparisons.

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1 INTRODUCTION

The principles guiding tax policy should usually include some conception of distributional justice, and the design of policy should apply these principles in a consistent fashion. Part of the literature on the economics of distributional justice is closely connected to the literature on economic inequality through different threads that focus on different dimensions of inequality, in other words, through different aspects of the justice-in-distribution issue. The main connection involves conventional inequality measurement, but there are also connections to the analysis of income mobility. However, while there might be wide acceptance of the weak proposition that tax progressivity is associated with justice, can tax justice be directly linked with inequality? If so, in what way are changes in inequality linked to changes in the apparent justice of the tax system?

The issues involved are illustrated using a broad-brush picture of taxes and benefits in the UK during the first twenty years of this century. What appears to have happened to the progressivity of government intervention in personal incomes in the light of changes in the structure of taxation and benefits? What might have been expected to have happened to inequality? The paper is organised as follows. In sections 2 and 3 we examine the standard pragmatic and analytical approaches to quantifying progressivity. Section 4 applies this analysis to the recent history of income distribution and redistribution in the UK. Section 5 discusses general issues raised by the analysis and concludes.

2 THEORY AND PRINCIPLES

There are parallels between approaches to inequality and approaches to tax design. In both fields there is concern for efficiency and equity at the heart of the analysis. In both fields there is a sub-literature that is based on intuition, one that is based on utilitarian welfare analysis and one that makes appeal to an axiomatic method. Some of the early literature on tax design and tax reform show this: it starts from the premise that the justice of the tax system is appropriately assessed in terms of distributional outcomes and the progressivity of the tax schedules that lead to those outcomes.¹

2.1 FOUNDATIONS

The connection of tax progressivity with inequality involves two principal elements.

The first is the ‘income’ concept of inequality analysis, which corresponds to the tax base in the taxation literature. According to the Haig-Simons principle, [1, 2] every individual should pay tax on total income from whatever source; it is the core of the ability-to-pay criterion [3]. But in practice this is a counsel of perfection: data limitations mean that the ideal income concept is elusive and a set of pragmatic alternatives is adopted, taking several broad measures of income as alternative practical measures of individual well-being. This is illustrated in the UK example below.

The second element is how the taxation component is incorporated into the distributional analysis. The principal idea is that the tax system, extended to cover also the system of benefits (income support), is codified in laws and codes which determine the amount of taxes to be paid, or benefits received, by each citizen. The net result of this intervention by the state is a quantity given by $t = \tau(y)$, where t is the net tax payment required from a person with pre-intervention income y and τ is a simplified representation of the tax-benefit system as function of a person’s income. The system transforms one income distribution (that of pre-intervention income y) into another income distribution (that of post-intervention income x) according to this formula:

$$x = y - \tau(y).$$

This y -to- x transformation encapsulates the social values and principles underlying the tax-benefit system, where benefits are treated as negative taxes; it suggests that the justice issue should be associated with the properties of τ . One of the most commonly recognised properties

¹ See Feldstein’s seminal paper [8] that demonstrates the connections to the analysis of inequality.

of a tax-benefit schedule is *progressivity* – whether better-off people bear more of the taxes – and there is more than one way of encapsulating this idea, as discussed below.

Illustration: the UK in the early 21st century

An example of the effect of individual interventions by government agencies on the income distribution appears in the summary data published by UK’s Office for National Statistics (ONS). The advantage of these data is that they provide easily accessible information that enables one to get a clear picture of the way key metrics of distribution have changed in the UK for an interesting range of income definitions. The ONS provides series on the following five income concepts:

1. Original income: essentially market income plus private pensions
2. Gross income: the line above plus public cash benefits (including state pensions)
3. Disposable income: the line above minus direct taxes (including income tax, national insurance and council tax payments)
4. Post-tax income: the line above minus indirect taxes (including value- added tax, alcohol and tobacco duties)
5. Final income: the line above plus public non-cash benefits (including health and education)

A summary of the inequality outcomes for the income concepts 1–5 along with consumption over the early 21st century is shown in Figure 1. As we can see, the trend in inequality, measured by the Gini coefficient, is not dramatic either upwards or downwards, for any of the five income concepts or for consumption expenditure. The issues raised are examined in more detail in section 4 below.

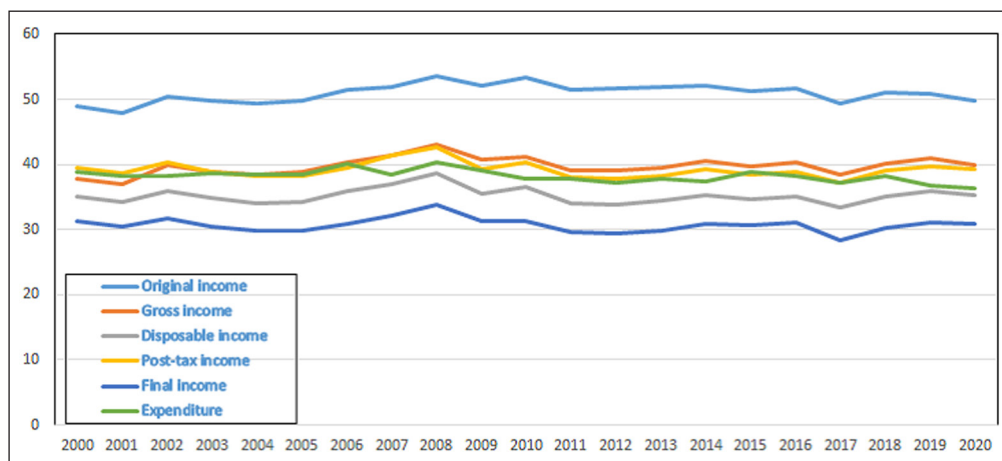


Figure 1 Gini history for five income concepts and expenditure.

Definitions of progressivity

Should tax justice be identified with progressive taxation? Although it makes sense to connect the concepts of progressive taxation and redistributive taxation, a simple identification of the two concepts is not possible because of the multiple definitions of progressivity; ‘a progressive tax system should be defined as one where the average rate of taxation increases with income before tax. The degree of progression, however, is often referred to by politicians and economists with no precise meaning attached to it’ [4]. Three different concepts of progression identified in the early literature [4, 5, 6] can be described in relation to pre-intervention income y :²

- *average-rate progression*: the rate of change of the average tax rate as income changes.
- *tax-liability progression*: the percentage change in tax liability for a one-percent change in pre-intervention income
- *residual-income progression*: the percentage change in post-intervention income for a one-percent change in pre-intervention income

The role of these concepts is examined in section 3.

² Musgrave and Thin [5] also discuss a fourth concept, marginal rate progression, which is less relevant to an approach that focuses on inequality and tax justice.

2.2 DISTRIBUTIONAL ANALYSIS

The way tax-benefit progressivity is conventionally measured can be shown with two applications of Lorenz-curve analysis.

Tax-liability progression

For a population of n people write the list of pre-intervention incomes as y_1, y_2, \dots, y_n , where the subscripts 1, 2,... are the labels of individual income recipients ordered from low to high. Write the sum of the first i of these incomes as Y_i ; this means that total income is Y_n , and so the income share of the bottom i recipients is Y_i/Y_n . Doing the same exercise for net tax payments, the share of bottom i is T_i/T_n , where T_i is the total net taxes paid by the i people with the smallest net tax payments. If the ordering of income recipients by income is the same as the ordering by amounts of net taxes, then these 'share' calculations give the Lorenz curves for income and for tax as in Figure 2 [7], where on the horizontal axis we have i/n (the population shares) and on the vertical axis we have Y_i/Y_n , or T_i/T_n for three different types of tax schedule. The 45-degree line represents perfect equality: for all i the share of income would be exactly the same as the share of the population; the red curve is the Lorenz curve for a typical income distribution, plotting the pairs $(i/n, Y_i/Y_n)$; the black line also represents the distribution of tax payments in the case of a uniform lump-sum tax; the red curve also represents the distribution of tax payments in the case of a tax that is proportional to income. The green dashed curve shows the distribution of tax payments for the case where there is an exemption level. Because the red curve depicts a proportionate tax system, it represents a zero-progressivity case: curves above the red curve are regressive – such as the lump-sum taxes depicted by the black line – and tax-Lorenz curves below the red line are progressive – such as the one depicted by the green dashed curve. Following this intuition, progressivity can be measured using the deviation of the tax-Lorenz curve from the red curve. This gives a standard pragmatic method of measuring tax progressivity in aggregate: the total measure of progressivity is twice the shaded area shown in the picture.³

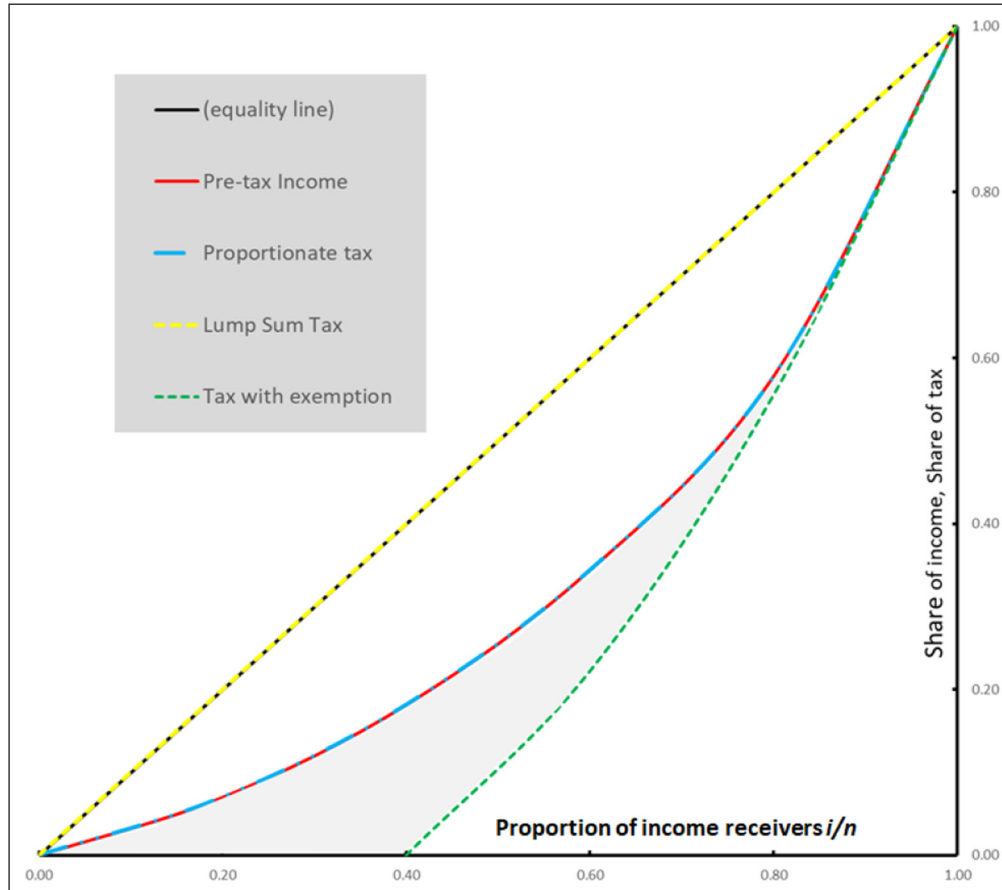


Figure 2 Lorenz curves of income and tax payments.

³ An alternative pragmatic method uses a modified Lorenz diagram with share of income on the horizontal axis and share of net tax paid on the vertical axis [32].

Residual-income progression

Tax-liability progression is not ideal for understanding the connection from the policy intervention to distributional outcomes. For this purpose, residual-income progression is straightforward and transparent. ‘Residual income’ is income after intervention by the tax-benefit system, x_1, x_2, \dots, x_n . Intuitive comparisons of the post- and pre- intervention distributions can be made if the ordering of individuals is left unchanged by the intervention. Figure 3 shows the Lorenz curves for the five ONS income concepts mentioned in section 2.1 and gives snapshots of state intervention into household budgets and the apparent outcomes of different types of intervention at the beginning and end of the period.

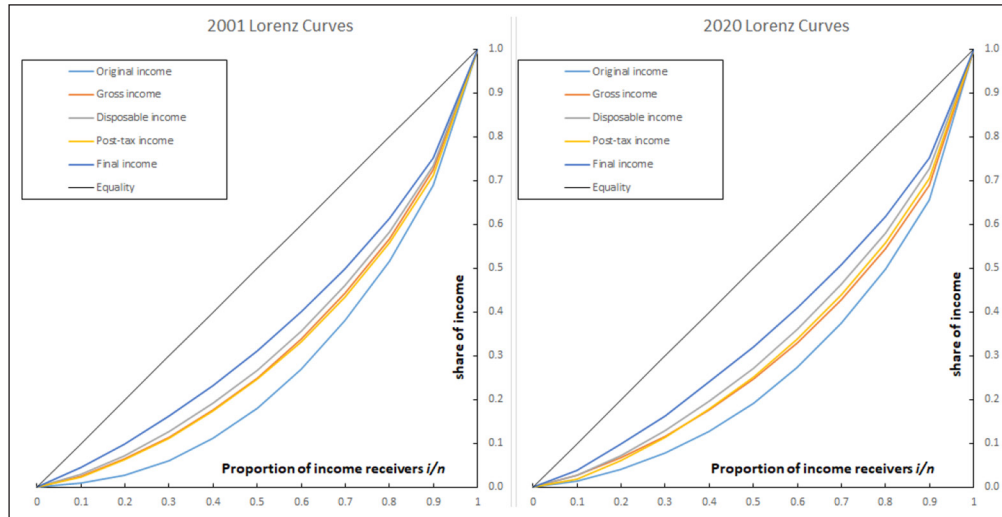


Figure 3 Lorenz curves for five concepts of income.

In this case the distributional summary depicted in Figure 3 appears to reveal several cases of Lorenz dominance:⁴ as one proceeds through income concepts from 1 (original income) to 5 (final income) the Lorenz curve becomes closer to the line of equality, with one exception – the step from line 3 to line 4 accounted for by indirect taxes. It appears that, with this exception, each of the interventions is progressive and that benefits (cash and non-cash) are more progressive than taxes.⁵

Difficulties

Three qualifications should be mentioned. The first is that several of the income adjustments described above come, in practice, from imputations (based on household characteristics) rather than direct observations (this is done in the case of non-cash-benefits). Second, the application of some taxes or benefits may cause reordering among income recipients. So, when comparing post-intervention income distributions with pre-intervention distributions it is argued that this reordering should be taken into account: instead of representing the distribution of post-intervention income as x_1, x_2, \dots, x_n , where the ordering is from low to high according to the x -values, it should be arranged in the order from low to high according to the y -values, but then the resulting curve will be more difficult to interpret: see section 3.2 below. Third, the analysis focuses purely on the mechanical effect of taxes and benefits: to build progressivity considerations into a proper policy analysis one would have to allow for the responses by people to the tax-benefit system.

3 TAX PROGRESSION: ANALYTICAL APPROACH

What is the basis for choosing the standard pragmatic measures or the Lorenz-curve empirics as the appropriate way to consider tax progression? Consider how the progressivity of τ might be characterised in terms of social welfare.

⁴ Distribution x Lorenz-dominates distribution y , if it is true that the x -Lorenz curve lies somewhere above, and nowhere below, the y -Lorenz curve [33].

⁵ The Institute for Fiscal Studies uses a different methodology that computes the impact of indirect taxes as a proportion of expenditure rather than as a proportion of income as done in the ONS calculations [34]. On this basis they find that indirect taxes are broadly neutral, whereas, on the ONS basis of calculation, indirect taxation is regressive.

This idea was already present in the seminal Feldstein article [8]. It is also evident in the parallel literature on the design of fiscal systems which drew attention to the issue of “incentives” as a limitation on the possibilities for redistribution [9]. The approach builds on the welfare-based contributions to the inequality literature [10]. Suppose that income recipients are identical in every respect other than their incomes,⁶ and that social welfare depends on the distribution of post-intervention incomes x in a way that is:

- income-regarding so that, other things being equal, an increase in any person’s income increases social welfare;
- equity-regarding so that, other things being equal, a transfer to a richer person from a poorer person would always reduce welfare (the “transfer principle” [11]).

A basic result for a social-welfare function that is both income-regarding and equity-regarding is this: if distribution x has the same mean income as distribution y , then welfare in x is higher if and only if x Lorenz-dominates y . This means that inequality must be lower in x than in y , whatever inequality index is used [12].

3.1 TAX PROGRESSIVITY AND WELFARE COMPARISONS

A neat result then connects the residual-progression of tax-benefit schedules to the concept of Lorenz dominance [4]. Given two tax-benefit schedules τ and τ' resulting in post-intervention income distributions x and x' , distribution x will Lorenz dominate x' as long as τ is more progressive than τ' at all income levels.⁷

This result can be deepened and extended by considering the relationship amongst the following three propositions which have a clear practical interpretation:

1. “The average tax rate never decreases with y .”
2. “Disposable income x never decreases with y .”
3. “Inequality of x is not greater than inequality of y .”

These three propositions are linked together in the following simple result:

Theorem: Propositions 1 and 2 jointly hold if and only if proposition 3 holds [13].

This theorem is fundamental to the relationship between the tax-benefit schedule and inequality; it provides insight on the logical consequence of progressivity for distributional justice. Proposition 1 is a “greatest burden on those with the broadest shoulders” property: the tax-benefit schedule τ is designed in such a way that the ratio $\tau(y)/y$ never falls as y goes up. Proposition 2 is an “incentive preservation” property: it rules out the marginal tax rate exceeding 100%, a feature that is taken to be essential in good tax design [9]. To make sure that the design of τ cannot increase inequality of post-intervention income (proposition 3), both propositions 1 and 2 must hold.

3.2 EXTENSIONS

So, the Lorenz-dominance relation, introduced as an intuitive idea in section 2.2, is at the heart of the analysis connecting tax progressivity and tax justice, interpreted in terms of inequality reduction. The analysis needs to be developed in two directions that involve distributional justice questions associated with income taxation. The two directions concern issues that are assumed away when the simple Lorenz-dominance criterion is used.

The effect of income scale

The first of these focuses on the conventional assumption that inequality remains unchanged under proportionate changes in all incomes. It sidesteps the issue of how inequality comparisons should be made at different levels of real income. Suppose Austria has a higher income per

⁶ The difficulty of applying a method of equalisation to achieve this in practice is considered at the end of section 3.2.

⁷ The underlying intuition for this result is this: if the elasticity of x with respect to y is always below the elasticity of x' with respect to y , then the ratio x_i/x_{i-1} is always lower for tax-benefit schedule τ than for τ' . This assumes that the tax-benefit system does not re-rank people in the distribution.

head than Belgium but that the two countries have the same level of inequality. What changes in real income in the two countries would leave this inequality judgment unaltered? The same income growth for everyone in the two countries (relative inequality comparisons)? Or the same dollar increase for everyone in the two countries (absolute inequality comparisons)?⁸ Or a criterion that is intermediate between the relative-inequality principle and the absolute-inequality principle [14, 15]? If net tax payments are increasing with income, then the insights of section 3.1 carry over in modified form [9, 16].

Horizontal inequity

It is usual to distinguish between “vertical inequity,” corresponding to the disparities in incomes that were considered earlier using Lorenz analysis, and “horizontal inequity” corresponding to the idea that government intervention should treat people with the same circumstances in the same way: “equal treatment of equals.” In principle, income recipients with the same level of income and the same circumstances should be liable for the same taxes or transfers. In practice, a tax-benefit system can alter the rankings of the people in the income distribution [17, 18], and it is this phenomenon that has been seen as the essential manifestation of horizontal inequality in taxation [19, 20, 21, 22]. It leads to the problem alluded to in section 2.2: if we compare pre- and post-intervention distributions arranging the x-values in the same order of as the original y-values, the resulting plot of income cumulations is not a true Lorenz curve and is hard to interpret in terms of inequality. There is no natural way of quantifying degrees of horizontal inequity in a manner similar to that used for vertical inequity (income inequality), nor is there a universally accepted set of criteria. There may be a case for considering other distributional criteria such as mobility.

Because taxes are complex and taxpayers are diverse it is unrealistic to expect that the outcome in terms of disposable incomes can be represented as a known determinate function τ . Those with the same income may pay different taxes arising from different behaviour rather than different circumstances. Incomes derived from assets may present valuation problems that can appear to introduce an element of randomness into the relationship between pre-intervention and post-intervention income. The effect of deductions may undermine progressivity [23] and the complexity of the jurisdiction’s tax structure may result in unequal knowledge by income recipients of legitimate opportunities to reduce tax liability. Different tax-benefit schedules will be applied to specific population groups with different needs, but the differences in the tax-benefit schedules are unlikely to conform with the adjustments that might be made when designing an equivalence scale on social-welfare grounds [24].

3.3 OVERALL PROGRESSIVITY

For a complete analysis a systematic method of aggregating the information about progressivity at each income level is needed. This could be achieved by one of two routes.

Orderings

It is useful to be able to say that, under conditions A, B and C, one tax-benefit schedule displays more progressivity overall than another. One method for doing this might be to extend the pragmatic method in section 2.2 to the ranking of distributions [25]. However, the quantitative measures of progressivity implicit in Figure 2 are arbitrary with little to choose between them. The pragmatic method of Figure 3 is more promising since it is directly connected with the welfare-based approaches in section 3.1. Using that, one can construct orderings of distributions in terms of social welfare [26].

Aggregate indices

In inequality analysis it is convenient to aggregate the information in a distribution into a single index of inequality, in addition to using Lorenz curves. Similarly, it would be convenient to have a single index of tax-benefit inequity that captures the impact of taxes and benefits on vertical

⁸ There are few inequality indices that have implied contour maps that allow them to be adapted both as relative and as absolute inequality indices; the Gini coefficient (a relative measure) is one of them: multiply the Gini by mean income and you obtain the Absolute Gini; the variance (an absolute measure) is another: take the square root of the variance and divide by the mean and you get the coefficient of variation.

and horizontal inequity. This approach might seem arbitrary, as with the pragmatic approach to progressivity discussed in section 2.2. If one uses an explicit social-welfare function to evaluate income distributions, then it would seem natural to compute the aggregate effects of a progressive schedule on individual income-recipients using in terms of social welfare [27]. However, as the discussion of horizontal-inequity issues shows, heterogeneity would present a problem in implementing this appropriately.

Alternatives

A potential alternative to the social-welfare approach to the aggregate measurement problem could be based on other ways of comparing two distributions. The progressivity problem uses the idea of a reference distribution from which one may quantify the distance from the actual to the reference distribution [28]. In the case of tax-progressivity interpreted as residual progression the reference distribution would be the pre-intervention distribution; the post-intervention distribution is the distribution actually observed. The treatment in the literature of tax-induced reranking has drawn attention to the “mobility” aspects of reranking [19, 20, 29]. It is not self-evident whether this phenomenon is intrinsically good or bad, but it is a phenomenon that is susceptible of precise measurement using a small number of agreed principles [30]. In applying this to the concept of tax-mobility the same methodology and similar principles can be used as in the study of income mobility over time or between generations.

4 INEQUALITY AND PROGRESSION IN THE UK

Let us examine the tax-benefit progressivity concepts in the light of recent UK history.

The data used are the same as for Figures 1 and 3; they are compiled by the ONS and are now based on the UK’s Household Finances Survey.⁹ The focus here is again on the standard ONS income definitions and income has been equivalised by the ONS using the modified Organisation for Economic Co-operation and Development scale, using as a reference point a two-adult childless household. There are well-known limitations on such data, over and above the incidence assumptions mentioned in section 2.2. First, some of the components of an “ideal” income concept are not included – perhaps the most important of these omitted items is capital gains. Second, because the ONS data are principally based on survey data, it is bound to be the case that the quality at the top of the distribution is less satisfactory. To address this the ONS has introduced to the taxes and benefits calculations a top-income adjustment in order to address survey under-coverage of the highest earners; this is done by using tax record information.¹⁰ However, the use of tax data in the empirical analysis of income inequality presents the additional associated problem of tax non-compliance, with the consequent underestimation of income in the affected population subgroups. About six per cent of tax liabilities remain uncollected in the UK, although this proportion has remained relatively stable during the period; non-compliance particularly affects incomes in the top two decile groups [31].

Consider how the tax and benefit system has converted original income to final income, both as one combined operation and in the four notional separate stages identified within the ONS data. Using the same ONS data, the elasticity formulas for tax-benefit progressivity in section 2.1 can be estimated using discrete approximations; again, this can be done for the overall impact of the interventions, or for the four notional interventions computed by ONS.

INEQUALITY: SNAPSHOT AND TRENDS

The picture of redistribution is already evident from the pair of snapshots in Figure 3 above. Without using sophisticated tools, it is clear from each snapshot that the major contributions to the reduction in inequality occur (1) from the Lorenz curve for original income (the outermost curve) to that for gross income, and (2) from the Lorenz curve for post-tax income to that

⁹ See <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/theeffectsoftaxesandbenefitsonhouseholdincome/previousReleases>, <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/methodologies/improvingthemeasurementofhouseholdincome>.

¹⁰ See <https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/compendium/economicreview/february2020/topincomeadjustmentineffectsoftaxesandbenefitsdatamethodology>.

for final income (the innermost curve). Contribution (1) is attributable to cash benefits and contribution (2) to non-cash benefits. This confirms that over the first two decades of the 20th century the bulk of redistribution attributable to government intervention still comes from the effect of benefits rather than taxes.

The picture of trends from Figures 1 (Gini) and 3 (Lorenz) might suggest that little happened to UK income distribution over the 20-year period for any of the five ONS income concepts and for consumption. However, these overall views mask some interesting detail. Figure 4 shows that the share of original (market) income increased sharply in the final two years of the period; for comparison the changes in the share of the bottom decile group are also shown on the same diagram. Figure 5 (for final income) shows that this upturn in the share of the top 10 percent survives all four stages of redistribution recorded in the ONS data.

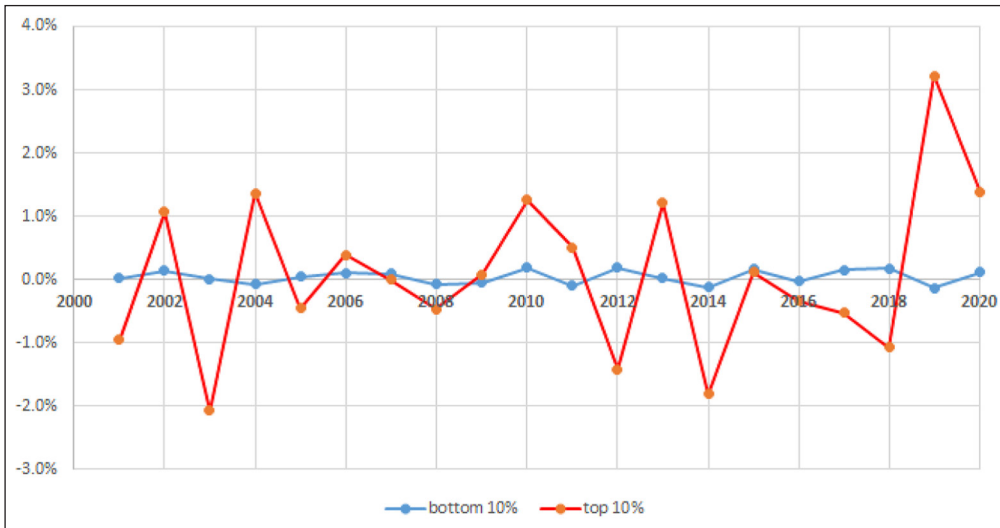


Figure 4 Changes in original income distribution: detail.

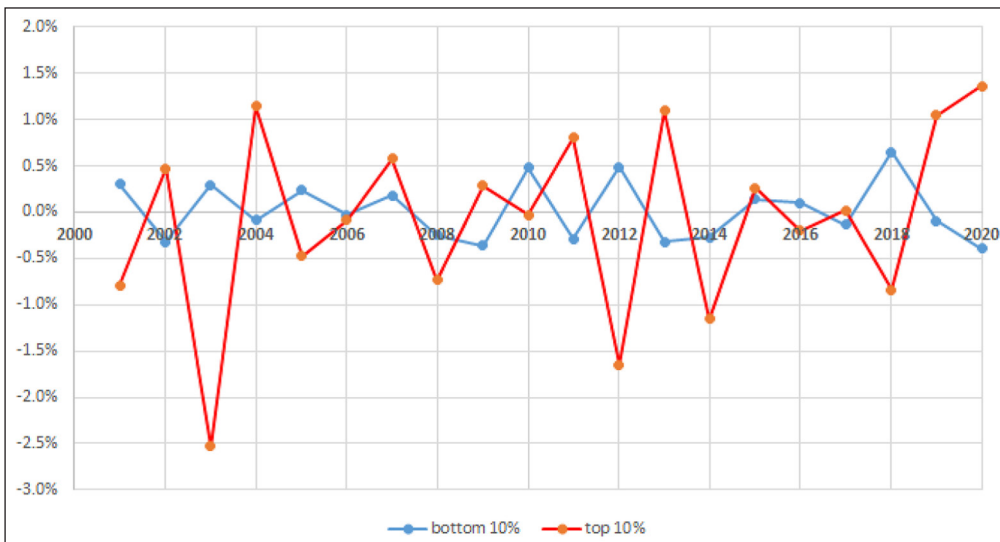


Figure 5 Changes in final income distribution: detail.

PROGRESSIVITY

The concept used is that of residual progression, introduced in section 2.1. Figure 6 shows the overall progressivity of tax-benefit interventions across the deciles at the beginning, middle and end of the period, and demonstrates that, for most of the deciles, there was an increase over the period with somewhat greater change in the first half of the period. Again, the overall picture hides interesting heterogeneity, as shown in Figure 7 for the four ONS components of redistribution. The changing pattern over the period 2000–2020 is clear for taxation, both direct and indirect: a reduction in progressivity for most deciles with a big change coming in the first half of the period and a slight shift back in the second. However, the pattern for benefits – from which most of the redistribution comes – is more nuanced.

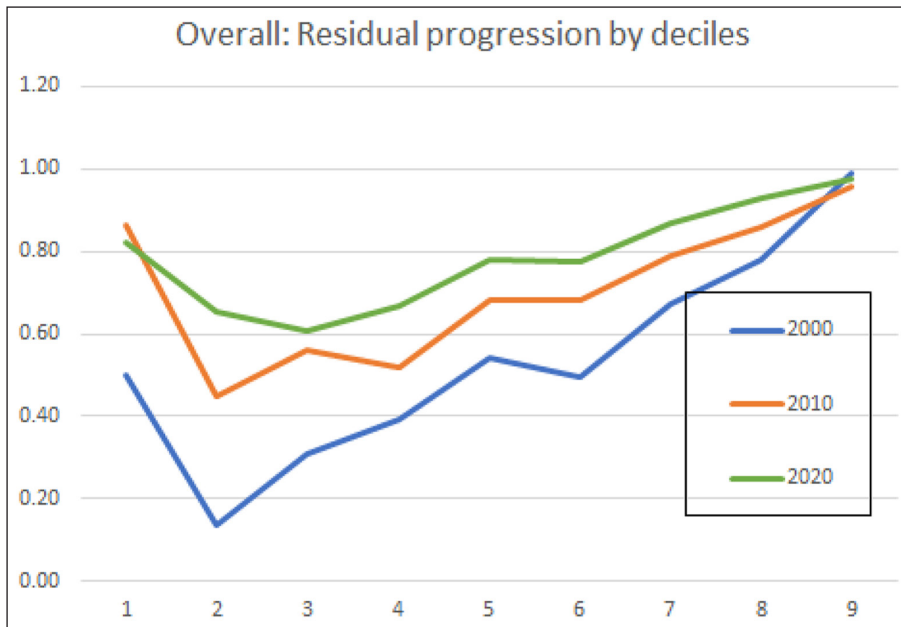


Figure 6 Residual progression overall.



Figure 7 Components of residual progression at beginning, middle and end of period.

ATR PROFILES

As shown in section 3 one of the key issues in understanding the effective progressivity of government interventions is the behaviour of the implied average tax rate (“ATR”, where benefits are included as negative taxes). Figure 8 shows the pattern of change for the overall tax-benefit system combined as an ATR profile across the deciles for each of the years 2000, 2010 and 2020. Figure 9 shows this broken down by individual components of redistribution. It is clear that a major part of the change in redistributive effect overall comes in the second half of the period (Figure 8), especially as concerns the lower decile groups, and that this change has largely been driven by cash benefits (top left of Figure 9).

5 CONCLUSIONS

Pragmatic approaches and formal analysis can help to inform judgments about tax progressivity and its relation to income inequality.

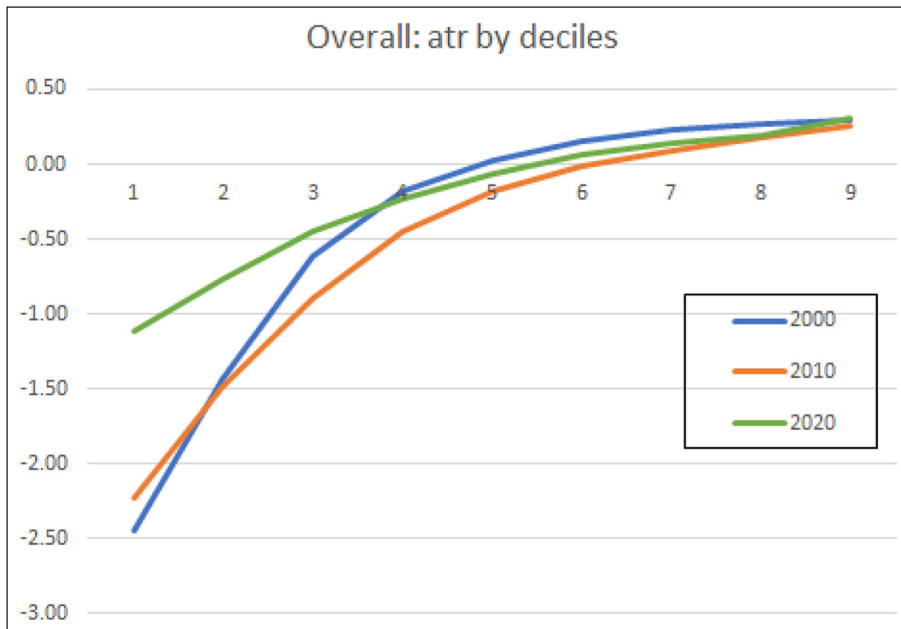


Figure 8 ATR profiles: 2000–2020.

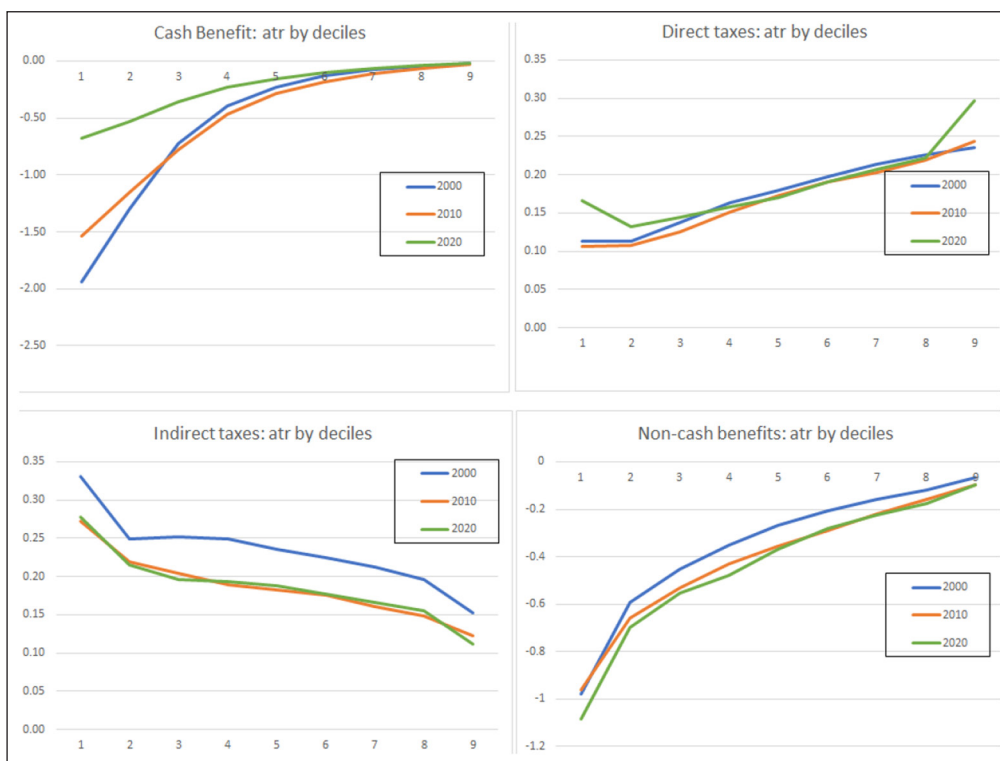


Figure 9 ATR profiles at each stage of redistribution.

Pragmatic approaches focus on two questions: (1) What is the distribution of tax payments? (2) How much do taxes and benefits shift the Lorenz curve? Both these questions tell us something useful, but more is needed to derive conclusions that are based on the established principles of welfare economics. The second question is key to understanding progressivity and inequality.

A KEY CONNECTION

There is a simple connection between distributional justice and tax progressivity through the basic welfare economics of distributional issues: Lorenz orderings of post-intervention distributions are connected to measures of tax progression. A sharp conclusion on the social-welfare impact of a tax schedule can be drawn by determining whether it is true that the average tax rate is always increasing and post-intervention income is always increasing with pre-intervention income. The first problem is that the simple results sweep aside difficulties raised by the heterogeneity of income recipients and the complexity of tax schedules. This has been addressed in the literature on horizontal inequity covering not only the issue of tax-induced re-rankings in the income distribution but other issues that are less straightforwardly

resolved. They may be suitably addressed by further theoretical and econometric developments on the comparisons of pairs of distributions. The second problem is whether “more progressive” necessarily implies “more just.” We know the conditions under which “more progressive” implies “more equal” in terms of outcome, but that is not quite the same thing. To clarify this issue we need to take a position on how, if at all, the criteria for inequality comparisons change when real incomes change (“vertical equity”) and whether distributive justice is to be applied ex ante or ex post (“horizontal equity”).

LESSONS TO BE LEARNED?

The experience of the UK in the early 21st century reveals that, as in the 20th century, the major redistributive effect comes from the benefit side of government intervention rather than taxation. Even though it appears that there has been an increase in the share of the richest towards the end of the period and even though the outcome in terms of tax changes has been a reduction in the progressivity of the tax system, the cash-benefit component of government intervention has driven the pattern of progression in the opposite direction.

This suggests three take-aways for the design of policy:

1. Distributional justice in taxation should be viewed not only in terms of the way taxes are raised but also in terms of the way the proceeds are spent on cash benefits and non-cash benefits. The experience of the UK and many other countries suggests that much of the overall progressivity of government intervention comes from the spending side rather than the revenue-raising side of the intervention activity. It is possible to have a substantial impact on inequality by focusing on the way benefits are structured rather than only worrying about, say, top rates of personal tax.
2. However, on the tax side, a shift from direct taxation (usually a progressive component) to indirect taxation (a regressive or neutral component) will reduce overall progressivity and worsen the distributional outcomes.
3. Both the top and the bottom of the distribution are important for appraising the overall progressivity of the tax-benefit system and its consequences for inequality and distributional justice.


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COMPETING INTERESTS

The author has no competing interests to declare.

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