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Reforming the Taxation of Earnings
in the UK

In the previous chapter, we looked at some of the theory and evidence on the taxation of earnings. In this chapter, we delve into a more practical assessment of the UK system and consider some changes to the rates and thresholds of existing taxes and benefits, illustrating the trade-offs involved and looking at promising avenues for improving work incentives where it matters most. In the next chapter, we go on to consider whether the set of taxes and benefits that currently exists is the right one at all: whether the way in which the taxation of earnings is implemented could be made not only simpler but also more conducive to achieving a sensible pattern of incentives.

The direct tax and benefit system is the main route through which the tax system as a whole achieves progressivity and redistributes from rich to poor. We have made a deliberate decision not to construct our analysis and proposals around a particular view of how much to redistribute. This is an issue over which reasonable people can and do disagree. But some ways of redistributing create more inefficiency, complexity, and work disincentives than others. The question we address is how to design the system to be as efficient as possible for a given degree of redistribution.

In this chapter, we focus on those elements of the tax and benefit system that depend directly on people's current earnings.[1] Other parts of the tax

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[1] As with the rest of the book, this was largely written over Summer 2010, and descriptions of the tax and benefit system generally relate to the system in place in April 2010. Estimates of

system also affect work incentives and the income distribution, and ultimately it is the impact of the tax system as a whole that matters. But, clearly, those parts that depend directly on earnings are best suited to fine-tuning the pattern of work incentives and finessing the trade-off between work incentives and redistribution. In subsequent chapters, we emphasize the potential for adjusting the rate schedule at which earnings are taxed to offset the distributional and work incentive effects that arise as a by-product of efficiency-improving reforms in other areas.

4.1. INCOME-RELATED TAXES AND BENEFITS IN THE UK

At first sight, the UK would appear to have a pretty simple system for taxing earnings. Income tax becomes payable at a 20% rate once earnings exceed £6,475 (in 2010–11). That rises to 40% £37,400 later. Until April 2010, that was pretty much the end of the story as far as income tax was concerned. We now, though, have the rather odd situation in which the income tax rate rises to 60% on earnings between £100,000 and £112,950, before dropping back to 40% and then rising to 50% once earnings reach £150,000. This schedule is illustrated in Figure 4.1.

But, of course, income tax is only one part of the overall story. We have an entirely separate direct tax system, National Insurance contributions (NICs), which layers an additional 11% tax rate on employees' earnings between £110 and £844 a week and 1% thereafter, with an additional 12.8% of salaries above £110 also payable by employers. Note that NICs are payable only on

distributional effects, effective tax rates, and so on, for both the 'current' system and simulated reforms, are based on the tax and benefit system in place at the end of 2009–10. More recent changes have done little to alter the arguments for reform; we indicate where significant reforms have been announced by the coalition government that took office in May 2010, but we do not analyse those announcements in depth.
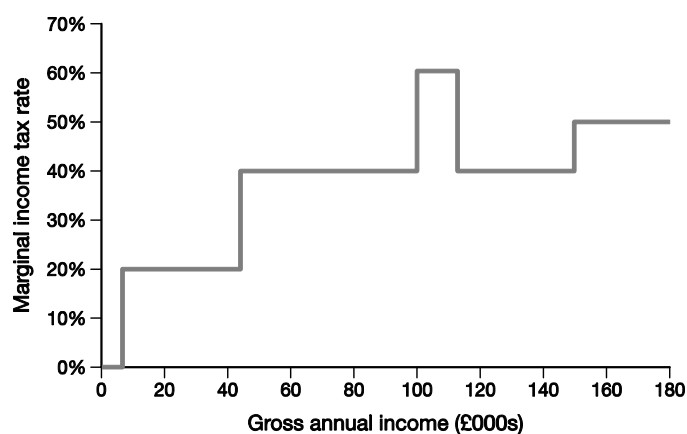
Figure 4.1. Income tax schedule for those aged under 65, 2010–11

earnings and not, unlike income tax, on other sources of income. Note also the oddity that whilst income tax thresholds and allowances are defined in annual terms, NICs thresholds are weekly.

The UK has means-tested benefits that top up the incomes of non-working families to a certain basic level, with a withdrawal rate of 100% (above a very small amount of earnings that does not reduce entitlement). Several separate benefits provide substantial additional support (regardless of work status) for housing costs (rent and council tax), children, and old age. These are withdrawn only once income reaches certain levels and at more moderate rates (though in combination with each other, and with income tax and NICs, they can yield extremely high effective tax rates overall, as we discuss later). Working Tax Credit provides extra means-tested support for low-income working families (with or without children).

Box 4.1 provides further details of each of these taxes and benefits, and the next chapter considers whether it is necessary to have so many of them, interacting in such complicated ways. But taking them all into account creates an overall rate schedule which, at least for low and moderate earners, looks quite unlike the income tax schedule illustrated in isolation in Figure 4.1. This overall schedule varies widely according to family type and a range of other characteristics, but as just one illustration, Figure 4.2 shows the relationship between gross earnings and net income—the 'budget constraint'—facing a low-wage lone parent with a particular set of circumstances.

Box 4.1. The main income-related taxes and benefits in the UK, 2010–11

Income tax: each individual has a tax-free personal allowance of £6,475. The next £37,400 of income is taxed at 20%, with income above that taxed at 40%. From 2010–11, the personal allowance is reduced by 50p for each £1 of income above £100,000 (creating an effective 60% band until the personal allowance has been completely removed at incomes of £112,950), and income above £150,000 is taxed at a new 50% rate. Those aged 65 or over have a higher personal allowance, though the extra allowance is gradually reduced by 50p for each £1 of income above £22,900 (creating an effective 30% band above this point).

  National Insurance contributions (NICs) are in effect a tax on earnings (other income is exempt). Employers are charged 12.8% of the earnings above £110 per week of each person they employ; the employees themselves pay a further 11%, falling to 1% on earnings above £844 per week. Reduced rates apply if an employee 'contracts out' of the State Second Pension and instead belongs to a recognized private pension scheme. Much lower rates of NICs apply to the self-employed.

  The main **means-tested benefits** and **tax credits** are as follows (in all cases, such means-testing is based on family income, unlike the individual-based taxes described above, and many have rules that reduce or eliminate entitlement for those with substantial financial assets):

  Income Support and **income-based Jobseeker's Allowance (JSA)** top up the incomes of eligible working-age families to a minimum level—£64.45 per week for singles and £102.75 for couples in 2010–11, with additions for carers, those with disabilities, and those with a mortgage—provided the claimant (and any partner) is not in full-time paid work. Since additional income is offset one-for-one by reduced benefit, the means test in effect imposes a 100% tax rate on small increases in claimants' family incomes (above a very small amount of earnings that is disregarded for the means test). Lone parents with young children, carers, and people with disabilities can claim Income Support; others can claim the same amount in income-based JSA provided they satisfy various work-search conditions. Individuals who meet the work-search conditions and who have paid enough NICs in the recent past can claim a non-means-tested £64.45 per week in **contribution-based JSA** for up to six months, even if their family income would disqualify them from income-based JSA (e.g. because of savings or a partner's earnings). Individuals with a disability that prevents them from working may be entitled to **income-based Employment and**

Support Allowance (ESA), which is gradually replacing Income Support for those with a disability. Entitlement to income-based ESA is calculated in a similar way to entitlement to Income Support and income-based JSA, but with different conditions.

Pension Credit fulfils a similar safety-net role for those aged above the female state pension age (currently rising from 60 in 2010 to 66 in 2020) to that played by Income Support for working-age families. But it tops up family income to a much higher level—£132.60 per week for singles and £202.40 for couples, again with various additions—and, for those aged 65 or over, the 100% withdrawal rate is replaced by a 40% withdrawal rate on income above the level of the Basic State Pension.

Housing Benefit and **Council Tax Benefit** help to cover low-income families' rent and council tax[a] respectively. Those with incomes low enough to qualify for Income Support (or the Pension Credit safety net, for those aged 60 or over) have their full rent (up to a cap) and council tax covered; above that income level, Housing Benefit is reduced by 65p, and Council Tax Benefit by 20p, for each £1 of after-tax income.

Child Tax Credit (CTC) provides up to £545 (the 'family element') plus £2,300 per child (the 'child element') for low-income families with dependent children, regardless of employment status. **Working Tax Credit (WTC)** provides support for low-income workers, with or without children: up to £1,920 for single people without children and £3,810 for couples and lone parents, with an extra £790 for those working 30 hours or more per week. Those without children must be working at least 30 hours per week and be aged 25 or over to qualify for WTC at all; those with children need only work 16 hours and can be of any age. If all adults in the family are working 16 hours or more per week, WTC can also refund 80% of registered childcare expenditure of up to £300 per week (£175 per week for families with only one child). A means test applies to CTC and WTC together: the award is reduced by 39p for each £1 of family income above £6,420 (£16,190 for those not eligible for WTC), except that the £545 'family element' is not withdrawn until income reaches £50,000, and then only at a rate of 6.7p for each £1 of pre-tax income.

Non-means-tested benefits are available for the elderly (**state pensions** and **Winter Fuel Payment**), families with children (**Child Benefit**), and people with disabilities and their carers (**Incapacity Benefit / contributory Employment and Support Allowance**, **Disability Living Allowance**, **Attendance Allowance**, and **Carer's Allowance**).

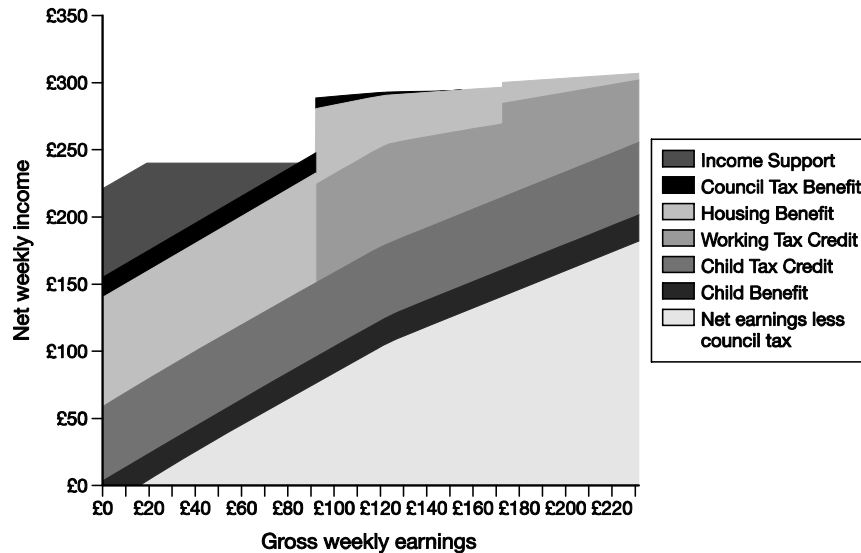[a] Council tax is a local property tax, discussed in Chapter 16.

Figure 4.2. Composition of an example budget constraint in 2010–11

Notes: Example is for a lone parent, with one child aged between 1 and 4, earning the minimum wage (£5.80 per hour), with no other private income and no childcare costs, paying £80 per week in rent to live in a council tax band B property in a local authority setting council tax rates at the national average. 'Net earnings less council tax' is earnings after deducting income tax, employee NICs, and council tax. Figure does not show negative amounts for 'net earnings less council tax' on the left-hand side where council tax exceeds net earnings: with zero earnings, 'net earnings less council tax' is –£15.77, with Child Benefit making up the difference from what is shown. Employer NICs and indirect taxes are not shown, though they are included in work incentive measures in the rest of the chapter, as detailed in Box 4.2.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN.

The main points to see in Figure 4.2 are the following:

- First, over a significant range, additions to gross weekly earnings make no difference to net weekly income. This reflects pound-for-pound withdrawal of Income Support as earnings rise.

- Second, there is then a jump in net income at 16 hours a week of work as Working Tax Credit (WTC) becomes payable. That jump in total income, though, is less than the receipt of WTC because Housing Benefit and Council Tax Benefit receipt falls in response to the WTC receipt. Nevertheless, there is a clear addition to income from working for this lone parent once she works 16 hours.

- Third, there is, however, little incentive to work more than 16 hours, as WTC and Housing Benefit are withdrawn as earnings rise further.

In addition, Figure 4.2 illustrates the complexity of the current system, with lots of different overlapping elements. That is why the coalition government has announced an intention to introduce a Universal Credit, integrating many of them into a single benefit. We discuss the idea of benefit integration in the next chapter.

Figure 4.2 shows only one example, however. Given the bewildering variety of ways in which the different taxes and benefits interact, depending on individual and family circumstances, we must be wary of extrapolating too much from this single case. We therefore turn now to summarize the impact of the tax and benefit system across the whole population, looking first at the extent to which it redistributes from rich to poor and then at its effects on work incentives.

4.1.1. The Effect of Taxes and Benefits on the Distribution of Income

The UK tax and benefit system as a whole redistributes significantly from high-income to low-income households. This is illustrated in Figure 4.3. The figure shows that benefits net of taxes (including indirect taxes) make up nearly 40% of the disposable incomes of households in the bottom tenth of the income distribution. This proportion falls over the next three deciles. The fifth decile pays slightly more in tax than it receives in benefits. Thereafter, net contributions rise rapidly such that what the richest tenth of the population pay in taxes (net of benefits) amounts to more than 60% of their disposable income.

Figure 4.4 shows how different elements of the tax and benefit system contribute to the redistribution we see in the system overall. Benefits and tax credits are overwhelmingly important for the poorest households, making up 85% of the disposable incomes of the lowest-income tenth of households and steadily declining in importance further up the distribution. Conversely, direct personal taxes become increasingly important further up the distribution. The income tax, NICs, and council tax paid by the highest-income tenth of households (or by their employers on their behalf) amount to more than half of their disposable income.
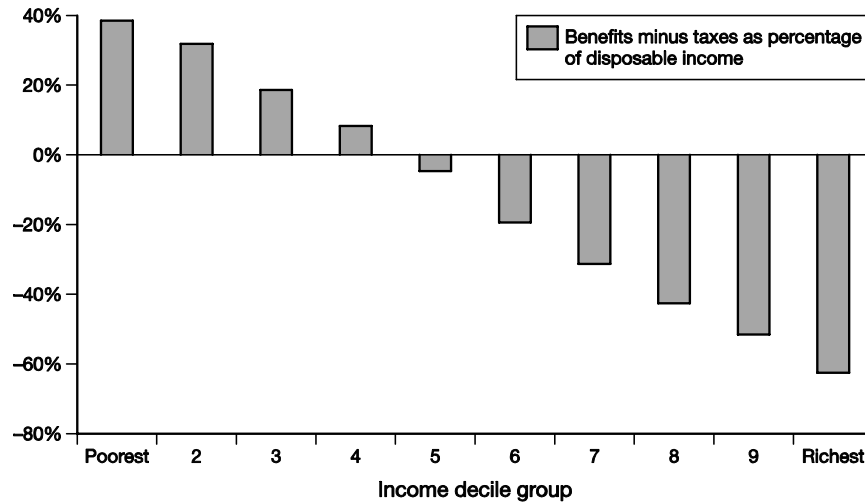
Figure 4.3. Distributional impact of the UK tax and benefit system in 2009–10

Notes: Income decile groups are derived by dividing households into ten equal-sized groups based on their disposable income adjusted for family size using the McClements equivalence scale. Assumes full take-up of means-tested benefits and tax credits. Excludes most 'business taxes' (notably corporation tax and business rates, though not employer National Insurance contributions) and capital taxes (notably inheritance tax, stamp duties, and capital gains tax).

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2007 Expenditure and Food Survey with indirect taxes calibrated to aggregates from HM Treasury (2010b).

It is immediately clear that the benefit system is largely responsible for the redistribution towards those on the lowest incomes. Direct personal taxes— mostly income tax and NICs, but also, for these purposes, council tax—are responsible for redistribution away from those with high incomes. This is not surprising—the direct tax and benefit system is explicitly redistributive. It is also quite appropriate that these are the elements of the system as a whole which do the heavy lifting in terms of redistribution.

Indirect taxes—VAT and excise duties—are regressive on this measure. They take up more of the disposable income of the poorest than of the richest. This arises mainly because, at any given point in time, low-income households typically spend a lot (and therefore pay a lot in indirect taxes) relative to their incomes. But VAT in fact is a smaller share of *expenditure* for poorer households in the UK, since goods subject to zero or reduced rates of VAT are mostly necessities such as food and domestic fuel. So, if
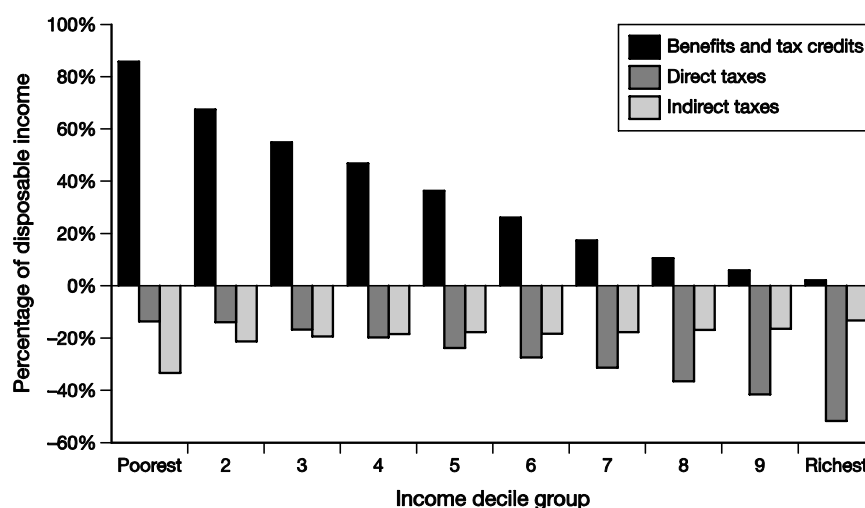
Figure 4.4. Distributional impact of different components of the UK tax and benefit system in 2009–10

Notes and source: As for Figure 4.3. 'Direct taxes' includes income tax, employer and employee NICs, and council tax. 'Indirect taxes' are VAT and excise duties.

lifetime income and lifetime expenditure are equal, as they will tend to be (the main difference being bequests given and received), VAT must actually take up a smaller share of lifetime resources for lifetime-poor households, and in that sense it is progressive.[2]

We will return to this issue in the context of VAT reform in Chapter 9. But it highlights more broadly the importance of taking a lifetime perspective on the tax system. Besides the particular pitfalls of examining indirect tax payments by income rather than expenditure, the redistribution shown in Figures 4.3 and 4.4 is a snapshot of money being transferred at one point in time. Many people will find themselves in different parts of the income distribution, and with different demographic characteristics, at different stages of their life, and much of the redistribution done by the tax and benefit system can be thought of as redistribution across the life cycle rather than between people. This idea of taking a lifetime perspective is one that will recur throughout this book.

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[2] Some excise duties, however—notably tobacco duty—are regressive on any measure.

The main point to bear in mind for the purposes of this chapter is that direct taxes and benefits are what make the tax system as a whole redistributive. It is straightforward to vary the amount of redistribution they do by changing tax rates and benefit levels. But, by reducing work incentives, these taxes and benefits also impose costs, and there is often a trade-off between the degree of redistribution achieved and the impact of the system on incentives. For the rest of this chapter, we focus mainly on the incentive effects of direct taxes and benefits. We start by describing these incentive effects, before going on to assess the system and consider possible reforms.

4.1.2. The Effect of Taxes and Benefits on Work Incentives

The tax and benefit system can affect the incentive to be in paid work at all and the incentive for someone already in work to earn a little more. The first effect is measured by the participation tax rate (PTR), the second by the effective marginal tax rate (EMTR). Box 4.2 explains in more detail how we calculate these effective tax rates.

Someone for whom an extra £1 of earnings is not only subject to basic-rate income tax and standard-rate NICs, but also reduces their entitlements to tax credits, Housing Benefit, and Council Tax Benefit, faces an effective marginal tax rate of over 96%. Low earners entitled to generous out-of-work benefits, but little in-work support, can face similarly high participation tax rates. These cases are not typical: they mainly serve to illustrate that the interactions between different taxes and benefits can lead to extraordinary outcomes.

Box 4.2. Measuring work incentives[a]

We measure the incentive to be in paid work at all by the participation tax rate (PTR), the proportion of total earnings taken in tax and withdrawn benefits. This can be calculated as

$$PTR = 1 - \frac{\text{Net income in work} - \text{Net income out of work}}{\text{Gross earnings}}.$$

We measure the incentive to increase earnings slightly by the effective marginal tax rate (EMTR), the proportion of a small increase in earnings taken in tax and withdrawn benefits.

To calculate PTRs and EMTRs for individuals in couples, we look at how the couple's net income changes when the individual in question stops work or changes their earnings slightly, holding the other partner's employment and earnings fixed.

Throughout this book, measures of PTRs and EMTRs incorporate income tax, employee and employer NICs, all the main social security benefits and tax credits, and the main indirect taxes (VAT and excise duties).[b] They do not incorporate capital taxes (corporation tax, inheritance tax, stamp duties, capital gains tax, or income tax on savings income) since, although they may affect work incentives, the extent to which they do so is difficult to assess even in principle and impossible to estimate with the data available.

Since we incorporate employer NICs and indirect taxes, what we are measuring is not just the gap between gross earnings and disposable income; it is the gap between how much labour costs the employer (i.e. earnings plus employer NICs) and the value of what the wage can buy (i.e. disposable income less the tax component of purchase costs). Not all past analysis has done this; but since employers presumably care about the overall cost of employing someone, while employees presumably care about what working (or working more) can buy them, including the impact of employer NICs and indirect taxes produces a more accurate measure of the disincentive to work created by the tax and benefit system than ignoring them does.

When calculating effective tax rates, we consider only the payments made at a particular level of earnings, ignoring any future benefit entitlement that payment of NICs in particular may confer and which offsets the disincentive effect of having to pay NICs. In practice, the link between NICs paid and future benefits received is rather weak in the UK, as discussed in the next chapter, so this simplification will not lead to major inaccuracies, but in some cases (notably the State Second Pension) the omission may be significant.

[a] Adam (2005) and Adam and Browne (2010) discuss the methodology used here in more detail.

[b] To incorporate indirect taxes, we estimate consumption tax rates (CTRs)—indirect taxes paid as a percentage of household expenditure—in the Expenditure and Food Survey and use those to impute CTRs in the Family Resources Survey used in this chapter. Note that CTRs will not quite be an accurate measure of how indirect taxes affect work incentives unless the average tax rate on what additional income is spent on is the same as that on existing purchases. More details are given in an online appendix available at http://www.ifs.org.uk/mirrleesReview.
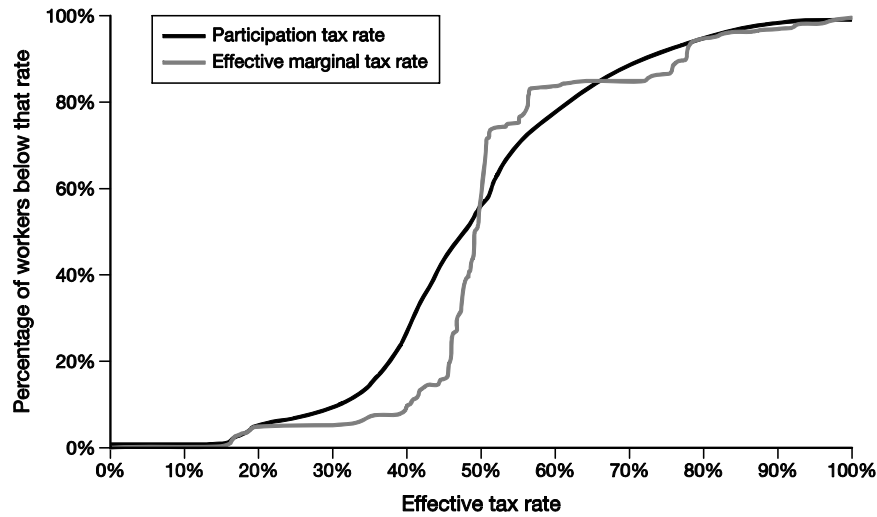
Figure 4.5. The distribution of PTRs and EMTRs among UK workers, 2009–10

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

The distribution of PTRs and EMTRs among UK workers is shown in Figure 4.5.[3] Reading across, we can see that (for example) about 10% of workers have PTRs below 30%, and 10% have EMTRs below 40%. A rough rule of thumb is that people's earnings (or additional earnings) are typically worth to them about half of what they cost their employer: the mean and median PTR and EMTR are all close to 50%. But while this rule of thumb is right for many people, it is far from universal. Half of workers have PTRs between 40% and 60%, but the other half are outside this range, with slightly more below this range than above it. The distribution of EMTRs is more concentrated: three-quarters of workers face an EMTR of between 40% and 60%. But 15% of workers—about 3.5 million individuals—face an EMTR above 75%, so that earning a little more buys them less than a quarter of what it costs their employer.

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[3] Adam, Browne, and Heady (2010) and Adam and Browne (2010) estimate PTRs for non-workers as well, showing that non-workers tend to face weaker incentives than workers.

Table 4.1. Distribution of PTRs among workers, 2009–10

	Mean	Percentile of distribution					Number (millions)
		10th	25th	50th	75th	90th	
Single							
No children	55%	39%	49%	53%	63%	75%	6.8
Children	50%	16%	38%	56%	67%	76%	1.0
Couple, partner not working							
No children	52%	31%	38%	48%	64%	79%	2.1
Children	66%	44%	53%	69%	79%	86%	1.8
Couple, partner working							
No children	41%	30%	37%	41%	45%	52%	8.3
Children	47%	27%	38%	48%	57%	66%	6.6
All	49%	31%	39%	47%	58%	72%	26.7

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey.

Table 4.2. Distribution of EMTRs among workers, 2009–10

	Mean	Percentile of distribution					Number (millions)
		10th	25th	50th	75th	90th	
Single							
No children	50%	41%	47%	50%	50%	73%	6.8
Children	71%	38%	56%	76%	87%	92%	1.0
Couple, partner not working							
No children	50%	34%	42%	49%	56%	78%	2.1
Children	65%	45%	49%	72%	78%	92%	1.8
Couple, partner working							
No children	47%	41%	46%	49%	50%	56%	8.3
Children	52%	40%	46%	49%	55%	76%	6.6
All	52%	40%	46%	49%	53%	77%	26.7

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey.
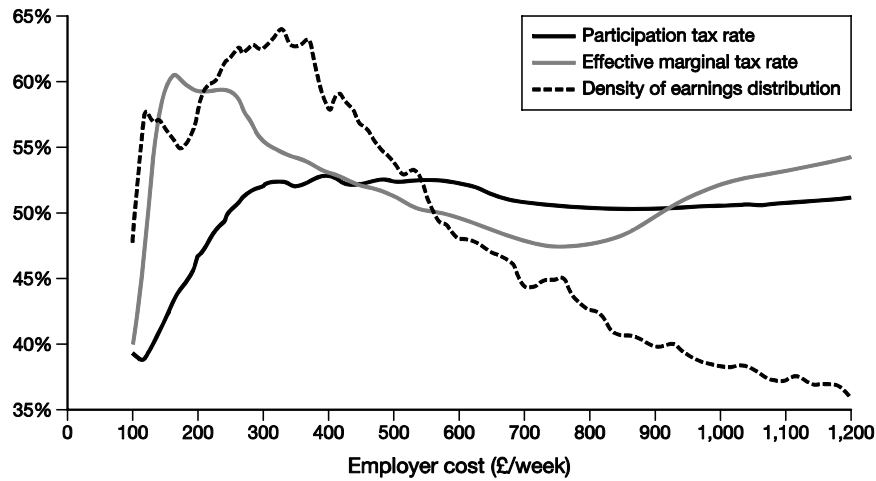
Figure 4.6. Average PTRs and EMTRs across the earnings distribution, 2009–10

Notes: Non-parametric regression (lowess) estimates for PTRs and EMTRs; kernel density estimate of the earnings distribution, for which no scale is shown. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

These EMTRs and PTRs vary both by income level and by other characteristics, notably housing tenure and family type. The variation by family type is illustrated in Tables 4.1 and 4.2. Sole earners in couples with children have the weakest incentives to stay in work (the highest PTRs), while people with working partners and no dependent children have the strongest. But single parents have the highest EMTRs, implying the weakest incentives to earn a little more; those in couples without children tend to have the lowest EMTRs. Both PTRs and EMTRs vary most widely among single parents, and least widely among single people and dual-earner couples without children.

The differences between family types shown in Tables 4.1 and 4.2 reflect different earnings distributions as well as different tax and benefit treatments: groups with high effective tax rates at any given level of earnings may still face low effective tax rates on average.

Figure 4.6 shows how average PTRs and EMTRs vary by earnings, measured in terms of the cost to an employer. The figure also overlays the frequency, or density, of workers at different earnings levels—the peak, or mode, being at an employer cost of around £330 per week. EMTRs tend to be

high at low levels of earnings as means-tested support is withdrawn, then fall at moderate-to-high levels of earnings where people face only basic-rate income tax, NICs, and indirect taxes, and then finally rise again as higher rates of income tax take effect—though never to the extraordinary levels faced by some low earners.[4]

Despite high EMTRs, PTRs are relatively low on average for low-paid workers.[5] This is because tax-free income tax allowances and NICs thresholds cover a large fraction of their total earnings (even if *additional* earnings would then be taxed at full income tax and NIC rates), and because moving into work often attracts WTC awards (even if *additional* earnings would then see these awards sharply reduced). Average PTRs are higher for those earning more, as the loss of out-of-work support is compounded by substantial income tax and NICs, rather than being offset by WTC.

But it should be stressed that these patterns are only averages at each earnings point. For example, the PTR associated with a particular level of earnings can depend on how many hours are being worked to earn it, since Income Support and JSA are not available to those working 16 hours or more while WTC is only available to those with (without) children if they work at least 16 (30) hours. Work incentives at a given level of earnings also depend heavily on family type and housing costs.

We have already mentioned the importance of family type. Most obviously, low-income people with children tend to face weaker work

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[4] Note that Figure 4.6 only shows earnings up to the equivalent of about £60,000 a year. Even at the £100,000 point at which there is a brief 60% income tax rate, and at incomes over £150,000 where the 50% rate takes effect, marginal tax rates never come close to those experienced by the lowest earners. Even at £60,000 a year, the earnings distribution is becoming considerably less dense.

[5] Figure 4.6 does not show effective tax rates on earnings of less than £100 per week, however. At these extremely low levels of earnings, people without a working partner typically face very high PTRs, since earnings would barely (if at all) exceed out-of-work benefits and WTC is not available for jobs of less than 16 hours per week (the minimum wage makes it difficult to earn much less than £100 if one works 16 hours or more). There are exceptions (such as students, who are not eligible for out-of-work benefits), but in general these high PTRs mean we would expect few people without working partners to choose to work for less than £100, and some apparent cases of people doing so look suspiciously like errors in the data rather than genuine examples. The weak incentive for lone parents to take 'mini-jobs' in the UK is documented and discussed in Bell, Brewer, and Phillips (2007).

incentives than those without children, since Child Tax Credit provides substantial means-tested support which is then withdrawn as income rises. But the presence and work status of any partner are also important. Because means tests are assessed on couples' joint incomes, the pattern of work incentives for second earners in couples is often different from that for first earners.

If one partner is in low-paid work, he will often be entitled to WTC, which gives him a low PTR—the point of the WTC system. But this creates a disincentive for the spouse to enter work because doing so will reduce the couple's entitlement to WTC. She will have a high PTR. On the other hand, if the first worker in a couple earns enough to exhaust the family's entitlement to means-tested support, a low-earning second worker can face a
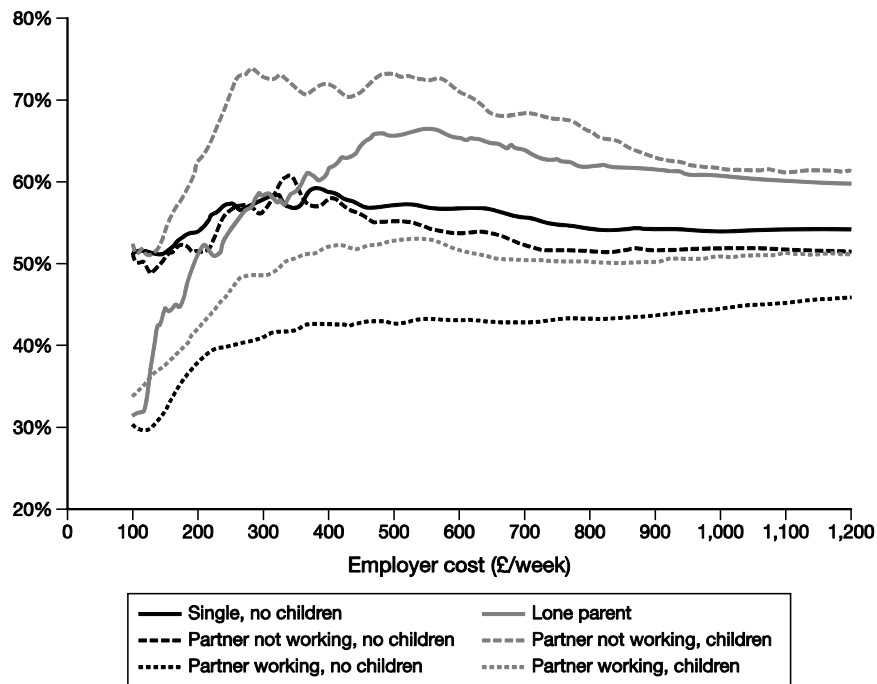

Figure 4.7. Average PTRs across the earnings distribution for different family types, 2009–10

Notes: Non-parametric regression (lowess) estimates. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

Figure 4.8. Average EMTRs across the earnings distribution for different family types, 2009–10

Notes: Non-parametric regression (lowess) estimates. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.
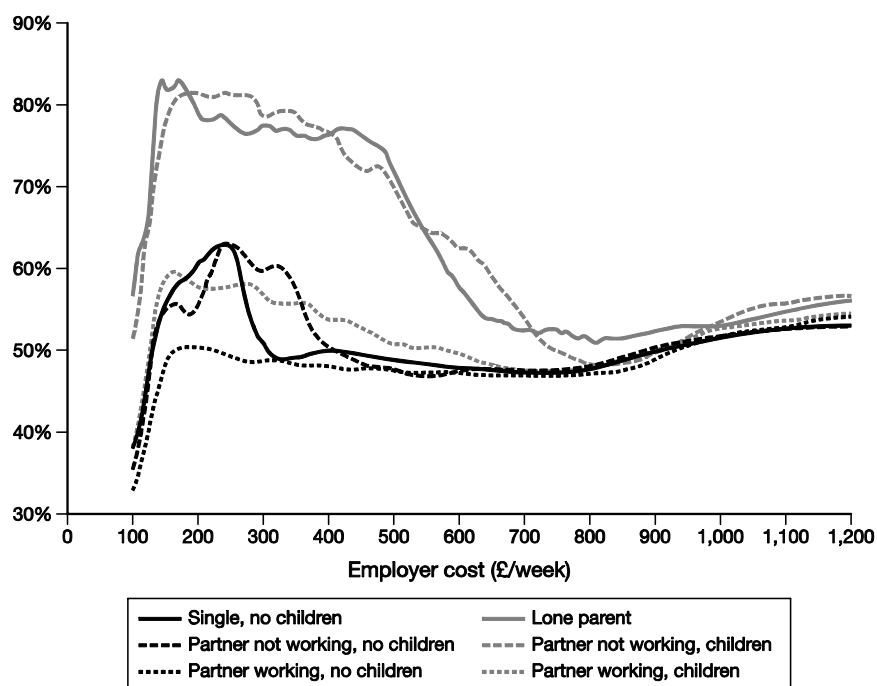
very low EMTR (with no benefit or tax credit withdrawal), far from the high EMTRs shown in Figure 4.6. Figures 4.7 and 4.8 show how average PTRs and EMTRs vary with earnings for different family types. It is clear from Figure 4.8 how the tax credit system affects EMTRs for the first earner in a family with children, with average EMTRs for this group above 70% up to earnings of around £500 a week.

Finally, the role of support for housing costs in determining the work incentives people face deserves to be highlighted. The government expects to spend £21.5 billion on Housing Benefit for renters in 2010–11, about the same as on Child Tax Credit and more than on any other benefit except the

Basic State Pension.[6] By providing support for potentially large rental costs when income is very low, and then withdrawing this support sharply as income rises, Housing Benefit is responsible for some of the weakest work incentives in the UK tax and benefit system. Tables 4.3 and 4.4 show that, on average, workers who rent accommodation have PTRs 13 percentage points higher, and EMTRs 11 percentage points higher, than those who own their homes outright (though some of this difference may reflect differences in their incomes and other characteristics as well as their housing tenure).

The position is more complicated for those with a mortgage. Out-of-work benefits can include a Support for Mortgage Interest (SMI) component,

Table 4.3. Average PTRs among workers by family type and housing tenure, 2009–10

	Rent	Own with mortgage		Own outright
		SMI	No SMI	
Single				
No children	60%	56%	50%	48%
Children	48%	54%	39%	35%
Couple, partner not working				
No children	65%	55%	50%	46%
Children	70%	66%	56%	52%
Couple, partner working				
No children	45%	40%	40%	39%
Children	58%	46%	45%	45%
All	57%	48%	45%	44%

Notes: 'SMI' and 'No SMI' columns give average PTRs for the same people with and without Support for Mortgage Interest included in their out-of-work income. Table excludes people with housing tenure not recorded in the data.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

[6] Sources: Department for Work and Pensions, Benefit Expenditure Tables, http://research.dwp.gov.uk/asd/asd4/index.php?page=medium_term; HM Treasury, 2010b; HM Revenue and Customs, 2010f.

Table 4.4. Average EMTRs among workers by family type and housing tenure, 2009–10

	Rent	Own with mortgage		Own outright
		SMI	No SMI	
Single				
No children	54%	49%	49%	50%
Children	79%	65%	65%	62%
Couple, partner not working				
No children	60%	50%	50%	47%
Children	78%	61%	61%	61%
Couple, partner working				
No children	48%	47%	47%	46%
Children	61%	51%	51%	51%
All	60%	51%	51%	49%

Notes: 'SMI' and 'No SMI' columns give average EMTRs for the same people with and without Support for Mortgage Interest taken into account in the (few) relevant cases. Table excludes people with housing tenure not recorded in the data.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

covering an assumed interest rate (regardless of actual interest paid) on the outstanding balance (capped at £200,000) of mortgages taken out before the claimant moved onto benefits. But non-pensioners can receive SMI only after three months on benefit—a significant delay for those with mortgage payments to make and no private income—and those on JSA can receive it only for two years.[7] Since SMI is available only for certain time periods, it is

[7] The precise rules on SMI have been subject to rapid change since Autumn 2008; the details in the text are accurate at the time of writing (April 2011), but some of the recent changes are explicitly temporary. The cap was increased from £100,000 to £200,000; the three-month waiting period used to be either six months or nine months, depending on circumstances; the two-year limit for JSA claimants is a new feature; and the assumed interest rate used to be set at 1.58 percentage points above the Bank of England base rate, was then frozen at 6.08% when the base rate fell during the recession, and from October 2010 is based on average bank and building society mortgage interest rates.

not clear whether one should include it in potential out-of-work income when estimating PTRs for workers with a mortgage. In the preceding analysis and the rest of this chapter, we treat all those with a mortgage as if they would be eligible for SMI—so we arguably overstate their PTRs—but Tables 4.3 and 4.4 show the work incentives such people would face with and without SMI.[8]

SMI makes almost no difference to average EMTRs, since people working 16 hours or more per week are not eligible for out-of-work benefits. It is largely irrelevant to the PTRs of people with working partners, for similar reasons. But it can have a big effect on PTRs for the first earner in a family, and particularly for those with children (who are more likely to have larger mortgages than other groups).[9] The average PTR is 15 percentage points higher for a working lone parent with a mortgage if they would qualify for SMI than if they would not, and 10 percentage points higher for the sole earner in a couple with children.

SMI is often overlooked, as very few people actually receive it—only 4% of Income Support claimants and 3% of income-based JSA claimants, for example[10]—and its cost is a tiny fraction of that of Housing Benefit. But SMI matters more for work incentives than this implies, because while more non-workers rent their accommodation than have a mortgage, most workers have a mortgage. The *potential* availability (or otherwise) of SMI can thus be important for many people currently in work.

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[8] We do not model the £200,000 cap on mortgages subject to SMI, so the true SMI-inclusive PTRs would be slightly lower than those shown.

[9] In the case of single parents, an additional factor is that they have lower average earnings than single people without children, so a given cash amount of SMI would make a bigger difference to the PTR. The opposite is true for sole earners in couples, however: those with children earn more on average than those without children.

[10] Source: DWP's Tabulation Tool (http://research.dwp.gov.uk/asd/index.php?page=tabtool), based on 5% sample data for February 2010. Corresponding figures for Pension Credit are not given, but they are likely to be rather higher: Pension Credit claimants make up the majority of SMI recipients.

4.1.3. Assessing the System

We have seen that the tax and benefit system is both significantly redistributive and creates important disincentives. Given the desire to redistribute, how does the pattern of work incentives described stack up against an 'optimal' pattern?

In broad terms, the pattern of work incentives outlined in the previous subsection corresponds surprisingly well to what would be demanded by the theory and evidence described in the previous chapter.

In the last chapter, we argued that for many groups—particularly single mothers, women with working partners, and the low-skilled—financial incentives affect the number in work more than they affect the earnings of those in work. This would tend to imply a strong case for keeping PTRs low at low levels of earnings. And indeed we find that PTRs are relatively low at low levels of earnings, on average, and especially for low-wage single parents and those with working partners, whose employment decisions are particularly responsive to financial incentives. The highest PTRs apply to sole earners in couples with children, and to a lesser extent to single people and sole earners in couples without children—the types of people who are likely to stay in work even if the incentive to do so is relatively weak.

The pattern of EMTRs shown in Figures 4.6 and 4.8—a 'U-shape', with high EMTRs at very low earnings, falling to a trough at employer costs of around £750 per week before rising again—is consistent with the lessons of optimal tax theory set out in the previous chapter for how the rate schedule should depend on the shape of the earnings distribution: that EMTRs should be highest when there are few people *at* that earnings level but many people *above* that earnings level.

Looking at Figure 4.6, we can see that EMTRs are highest, on average, at an employer cost of about £170 a week, just before the peak of the earnings distribution: there are relatively few people at that point (who might reduce their incomes in response) but many people above that point (so the high EMTR delivers a lot of revenue). Average EMTRs are lower at, say, £400, around the peak of the distribution. There are many people at that point (so strong disincentives would be damaging) and fewer people above it. The design problem is more complicated than that, of course—it must also take into account how responsive people at different earnings levels are,

the extensive as well as intensive margin of labour supply, possible variation between different demographic groups, and society's redistributive preferences. But the broad pattern of EMTRs does not stand out as obviously flawed.[11]

But while these broad patterns may look sensible, there remain problems for certain groups. And even where effective tax rates are low on average, they may be too high for some.

Although not all low earners face weak work incentives, the weakest work incentives are found at low earnings levels. The effective tax rates of 90% or more faced by some low earners as a result of several benefits and tax credits being withdrawn at once are surely too high: even without reducing effective tax rates on average, it might be possible to reduce the dispersion shown in Figure 4.5 and in Tables 4.1 and 4.2. Naturally, high PTRs and EMTRs apply to people who stand to lose a lot of state support if they work—usually because they have children and/or substantial housing costs, and do not have a working partner whose earnings exhaust entitlement. This includes not only primary earners, but also some second earners: as mentioned in the previous subsection, low-wage second earners (or potential second earners)—a highly responsive group—face relatively low PTRs on average, but high PTRs if their partners are also low earners since the tax credits the family receives with one person in low-paid work are withdrawn when a second person moves into work. Very high PTRs also apply to low earners who do not qualify for Working Tax Credit—those without children who are under 25 or who are working (or contemplating work of) less than 30 hours per week, and those with children working (or contemplating work of) less than 16 hours per week.

Further up the earnings distribution, we do not find quite such high effective tax rates—though it seems unlikely that the bizarre pattern of rising

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[11] Indeed, the pattern of a U-shape with a trough around £750 per week is remarkably similar to the simulated optimal EMTR schedules for the UK shown in figures 2.4A and 2.4B of Brewer, Saez, and Shephard (2010). These simulations should not (and were not intended to) be taken too seriously as a precise guide to policy—they ignore the extensive margin of labour supply, do not allow for any variation by demographics, and assume a uniform labour supply elasticity—but the broad pattern, driven by considerations of the shape of the earnings distribution, is certainly suggestive.

and falling marginal income tax rates shown in Figure 4.1 is optimal. Tax rates at the very top of the distribution are particularly important to get right because of the very large amount of revenue being extracted from a very small number of people. In Section 4.3, we consider the appropriate choice of top tax rates in detail.

Finally, looking beyond the broad family types we have considered so far, it is not clear that tax and benefit rates reflect demographic characteristics as well as they could, i.e. that the system makes full use of what we know about the labour market characteristics of different groups.

In what follows, we look first at possible reforms for low earners and then at the position for moderate and high earners. Finally, we turn to the question of whether demographic characteristics—specifically, age—could be used more intelligently than at present to target incentives where they are most effective.

4.2. EFFECTIVE TAX RATES FOR LOW EARNERS

Some low earners face very high PTRs and/or EMTRs as means-tested support is withdrawn. But reducing these effective tax rates clearly has costs as well as benefits: in simple terms, withdrawing this support from low earners can be avoided only by not providing as much support in the first place (which makes the poorest worse off) or by extending the support to those with higher incomes (which costs money that must ultimately come from someone). This is the central dilemma for policy, though there are nuances that make both the problem and the available policy options somewhat more complex in the real world.

To examine in more concrete terms the dilemma that policymakers face, we can consider some specific proposals put forward by Brewer, Saez, and Shephard (2010). They argue that PTRs and EMTRs are too high for many low earners, and suggest a set of reforms to the existing set of means-tested benefits and tax credits:

- increasing to £50 per week the amount that can be earned before means-tested benefits start to be withdrawn;

- doubling (from £6,420 to £12,840 per year) the amount that two-earner couples can earn before tax credits start to be withdrawn;
- reducing the rate at which tax credits are withdrawn from 39p to 34p per £1 of earnings;
- increasing WTC rates to the level of Income Support / JSA rates (except for lone parents, for whom WTC is already higher than Income Support).

Figure 4.9 shows how these reforms would affect the budget constraint facing the same low-wage single parent shown in Figure 4.2, with and without the reforms in place.[12] In this example, what stands out is the rise in in-work income—and thus the strengthening of the incentive to be in work—resulting from the first of the reforms listed above, the increase to £50 in the amount that can be earned before means-tested benefits start to be withdrawn and the budget constraint flattens out.
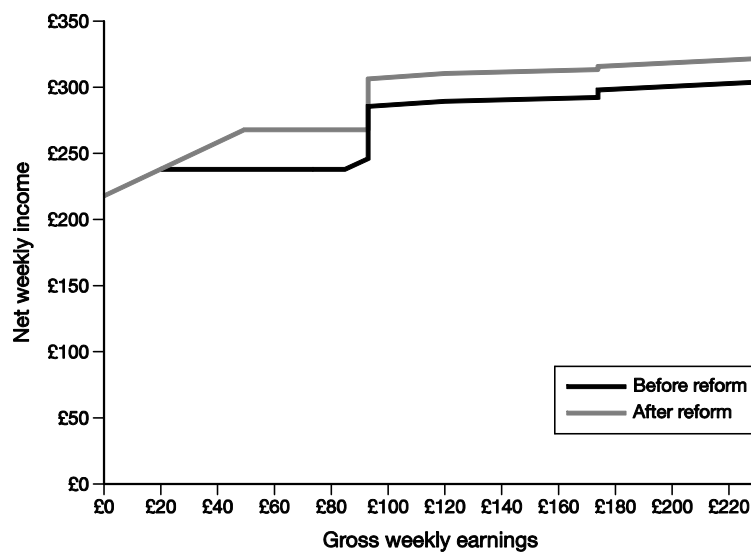

Figure 4.9. Effect of illustrative reforms on an example budget constraint in 2009–10

Notes and source: As for Figure 4.2.

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[12] The 'Before reform' line of Figure 4.9 is not quite identical to the top line of Figure 4.2 because Figure 4.2 was drawn for 2010–11 while the reforms illustrated here are to the 2009–10 tax and benefit system. The difference is minimal, however.

As ever, no one example tells the full story—indeed, only two of the four changes listed above apply to lone parents at all, though they would be important for other groups. Broadly speaking, these proposals were designed to increase the incentives for people to move into work—focusing on lowering PTRs and EMTRs at very low levels of earnings. But there is a cost to this. Means-testing and high EMTRs are pushed further up the earnings distribution. The proposals highlight a number of delicate trade-offs:

(i) *Incentives to be in work versus incentives to increase earnings.* All four components of this reform act to increase the net incomes of low-paid workers and therefore reduce their PTRs. But the result of means-testing less aggressively and increasing WTC is that means tests extend further up the income distribution, reducing the incentive for many of those in work to increase their earnings. The fundamental rationale for the reform is that this increase in EMTRs is a price worth paying for the reduction in PTRs.

(ii) *Incentives for first earners versus incentives for second earners.* Entitlement to means-tested support is generally assessed on the basis of a couple's combined income. Increasing support for low-earning families increases the incentive to have a first earner in work. But if that support is withdrawn against additional earnings, it can reduce the incentive for families to have a second earner in work. In a system of joint assessment, policies that reduce PTRs for first earners will therefore increase PTRs for many second earners.[13] The second component of this set of policies, introducing a higher tax credit threshold for two-earner couples, is designed to counteract this feature of the other three components and of the existing system—essentially by departing from the principle of pure joint assessment. It is particularly important given the evidence that employment responses are especially large among second earners.

[13] This can be thought of as a special case of the previous point: with a jointly assessed system, the trade-off is between the incentive for *families* to have someone in work and the incentive for *families* to increase their earnings, and one way in which single-earner families can increase their earnings is to have a second earner in work.

(iii) *Very weak incentives for a few versus quite weak incentives for many.*
Reducing the rate at which tax credits are withdrawn means that those
facing the highest EMTRs would see them reduced. But the price for this
is that the withdrawal is spread over a wider range of income and high
(albeit not quite as high) EMTRs affect many more people. On the one
hand, spreading high EMTRs more evenly is valuable: the distortion
imposed by taxes rises more than proportionately to their rate,[14] so
having two people face 50% tax rates is generally preferable to having
one person taxed at 30% and another at 70%. On the other hand, as tax
credit entitlement and means-testing are extended, they start to affect
income ranges that are more densely populated. This means that the cost
to government rises and that many more people face higher EMTRs
than lower EMTRs. Brewer, Saez, and Shephard (2010) argue that
current EMTRs are so extraordinarily high for some low earners that a
little spreading-out is justified.

(iv) *Theoretical optimality versus practical considerations.* A major extension
of means-testing has practical downsides quite apart from its effect on
EMTRs, including extra administration for government, hassle and
stigma for claimants, and widespread non-take-up of entitlements.
These practicalities matter—perhaps more than getting the theoretical
trade-offs precisely right. That is why we devote the next chapter to the
administration and integration of taxes and benefits.

Of course, alternative policies could be chosen to finesse these trade-offs.
One obvious way to reduce PTRs at relatively low (but not the lowest) levels
of earnings, without extending means-testing, would be to increase income
tax allowances (perhaps financed by increasing the basic rate of tax, thus
trading off reduced PTRs against increased EMTRs). This would have the
additional practical advantage of taking people out of the tax system
altogether. But this alternative does less to address the problems identified in
the existing system, since it would affect only those earning above the
current personal allowance whereas the argument for reducing PTRs is
strongest at even lower levels of earnings than this.

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[14] See Auerbach (1985) for an exposition; the idea has been traced back to Dupuit (1844).

Another possible reform, which would more fully address concerns about support for first earners weakening incentives for second earners, would be to make WTC entirely individually assessed. There would be a separate credit for each working individual, means-tested on their individual income, irrespective of any partner's circumstances. As noted in the discussion of family income taxation in Section 3.3, the obvious downside of this is the cost of paying tax credits to large numbers of people in relatively affluent families.

To illustrate the potential for reform more concretely, we focus here on the set of changes[15] that we outlined above.

To make a fair comparison with the current system, we need to recognize that all the components of this reform have a monetary cost—collectively, some £12.3 billion, if no one changed their behaviour in response to the reform[16]—and this must be paid for.[17] For illustration, we assume that they are financed through a combination of:

- a 12% cut in all the main means-tested benefits and tax credits except Pension Credit (offsetting the more targeted increases listed above);
- a 1 percentage point increase in the basic rate of income tax.

Having chosen a set of reforms to rebalance the system between non-workers, low earners, and higher earners, we try to upset the new balance as little as possible by sharing the burden of paying for them between all three groups: non-workers lose from the reduction in benefits, higher earners from the increase in income tax, and low earners from a combination of the two. These changes would raise the required £12.3 billion, again assuming no one changed their behaviour in response.

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[15] Those proposed by Brewer, Saez, and Shephard (2010).

[16] This is rather higher than the £8.8 billion costing given by Brewer, Saez, and Shephard (2010). They ignored free school meals, Support for Mortgage Interest, the childcare element of Working Tax Credit, the 'baby bonus' in Child Tax Credit and Housing Benefit / Council Tax Benefit, and the Sure Start Maternity Grant; we take all of these into account. The expansion of means-testing entailed by their reform would extend eligibility for all of these benefits to more families, increasing the overall cost of the reform.

[17] Brewer, Saez, and Shephard (2010) set out a long-run reform which was revenue neutral, but did not suggest how to pay for their short-run reforms.

By their nature, these reforms are not distributionally neutral. Strengthening incentives to enter low-paid work must increase support for low-paid workers (broadly the lower-middle of the income distribution) at the expense of the poorest and the rich: there is no escaping these distributional consequences.

Given this inevitable 'inverted-U-shaped' pattern of gains and losses, the relative sizes of the tax rise and the benefit cut used to finance the reform were chosen to minimize the overall distributional shift: it seems to us that the pattern of gains and losses shown in Figure 4.10 strikes a balance that is neither strongly progressive nor strongly regressive overall.[18] In financing
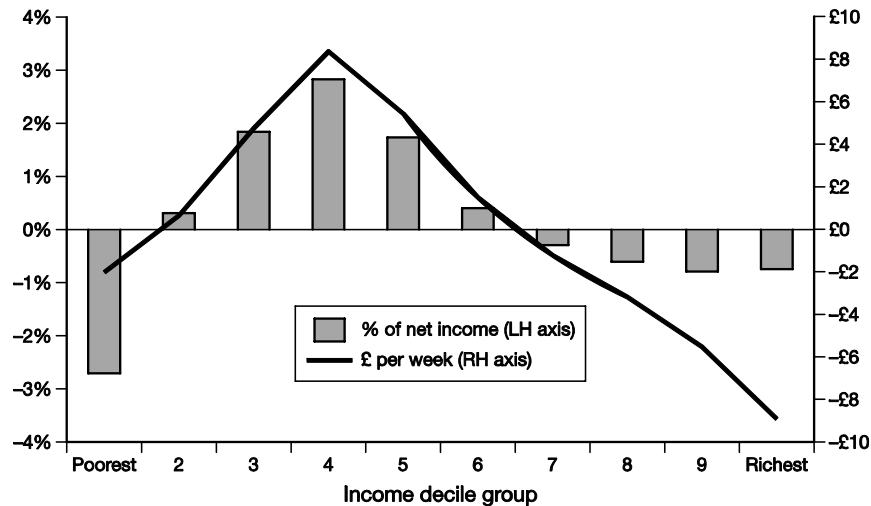

Figure 4.10. Gains/Losses across the income distribution

Notes: Reform as described in the text. Income decile groups derived by dividing families into ten equal-sized groups according to their disposable income adjusted for family size using the McClements equivalence scale.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey.

[18] Standard measures of inequality bear this out. The Gini coefficient and the coefficient of variation are slightly reduced by the reform, whereas the Theil mean log deviation is increased. These differences reflect different weights put upon extremely high and extremely low incomes by the various measures of inequality, but there is certainly no clear message of increased or reduced inequality that emerges.

gains for the lower-middle, the rich lose most in cash terms; the poorest lose most as a percentage of income.[19]

Whether the distributional pattern shown in Figure 4.10 is considered balanced—or acceptable—is a matter for political debate. Our intention is not to advocate the precise distributional outcomes associated with this particular variant of reform, but to illustrate the economic effects of moving in this broad direction.

Figures 4.11 and 4.12 show the effects of the reform on work incentives, illustrating some of the trade-offs discussed above. Figure 4.11 shows that average PTRs fall for low earners and rise for high earners.[20] But the overall average falls (by 1.5 percentage points, from 49.0% to 47.5%), and the fall is concentrated on the highest PTRs. In fact, the number of workers facing PTRs above 75% falls by 40% (800,000). By contrast, the average EMTR rises by 2.3 percentage points, from 51.6% to 53.9%; average EMTRs rise right across the earnings distribution, and especially for low-to-moderate earners (Figure 4.12). Again the highest effective tax rates are reduced: the number of people facing EMTRs above 75% falls by 900,000. But the number facing EMTRs between 50% and 75% rises by 4.9 million: overall, a 38% increase in the number of workers for whom any extra earnings are worth less than half what they cost their employer. This illustrates the trade-off between improving extremely weak incentives for a relatively small number of people and weakening already quite weak work incentives for a lot of people.

These overall patterns hide significant variations between family types. For example, the average PTR rises by nearly 3 percentage points for two-earner couples without children but falls for all other demographic groups—especially one-earner couples with children, for whom it falls by 9 percentage points. The average EMTR falls by 4 percentage points for lone parents but rises (by rather less than this) for all other groups.

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[19] Brewer, Saez, and Shephard (2010) restricted their attention to working-age families; we include pensioners as well. In practice, this makes little difference.

[20] Average PTRs rise for high earners partly because of the income tax rise, but also because many of these high earners have low-earning partners and so would be entitled to means-tested support if they did not work. Since support for families with a single low earner is increased by the reform, more support is then lost by the higher earner's being in work.
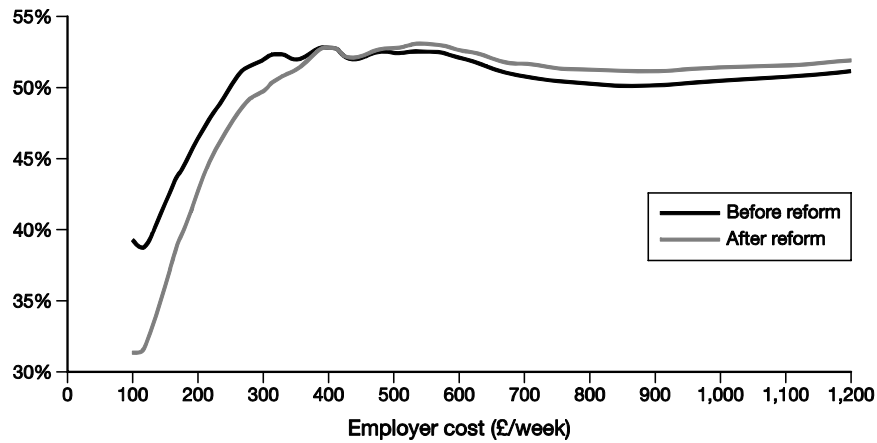
Figure 4.11. Effect of reform on average PTRs across the earnings distribution

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.
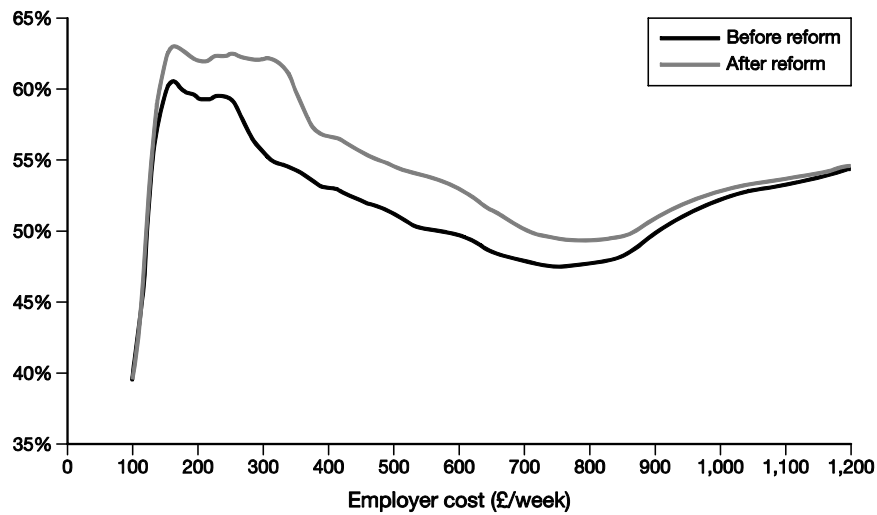

Figure 4.12. Effect of reform on average EMTRs across the earnings distribution

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

Using evidence (discussed in the previous chapter) about how responsive different types of people are, we can estimate the magnitude of the likely responses to these changes in work incentives, in terms of employment, hours worked, and total earnings.[21] While there is inevitably considerable uncertainty surrounding our assumptions, our central estimate is that this reform would lead to a remarkable 1.1 million (or 4.2%) net increase in employment. There is obviously a lot of uncertainty associated with this precise number: it is quite sensitive to assumptions, and the elasticities involved are not precisely measured and could themselves be changed by large reforms. The key point is just that the effect on employment could be large.

But those moving into work would predominantly be low earners, while the increase in average PTRs for high earners means that some of them would stop working. The increase in EMTRs also means that many of those who stayed in work would reduce how much they earned. So aggregate earnings (including employer NICs) across the economy would grow by much less: only 0.5%, or £3.5 billion. About £3.0 billion of this would accrue to the household sector in terms of higher consumption, while the Exchequer would gain £0.6 billion in higher tax revenues and lower benefit spending than in the absence of the reform.

To summarize: if the diagnosis is that net incomes in low-paid work are too low relative to net incomes out of work, then the treatment is to increase in-work incomes for the low-paid. But this treatment has undesirable side effects, the principal one being the extension of means-testing to many more people: around a million more families would be entitled to a means-tested benefit or tax credit as a result of this reform (from a base of around 14.6 million who we estimate are entitled now, about a third of whom are pensioners). The practical implications of such an extension of means-testing, quite apart from the associated weakening of incentives for low earners to increase their incomes, might make this reform a difficult pill for policymakers to swallow. The pros and cons are finely balanced.

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[21] Details of our methodology and assumptions are available in an online appendix available at http://www.ifs.org.uk/mirrleesReview. The same assumptions are maintained for labour supply estimates throughout this chapter and the rest of the book.

There may be ways to sugar the pill. To minimize (or avoid altogether) the extension of means-testing, reductions in effective tax rates could be focused more precisely where they are needed: rather than means-testing less aggressively overall, we could reduce effective tax rates specifically for those who are currently subject to several taxes and means tests simultaneously, which is where the biggest problem lies. That requires reforming the way in which different taxes, tax credits, and benefits interact—reforms which could also make means-testing less objectionable in the process. We address that subject in the next chapter.

4.3. TAXATION OF MODERATE AND HIGH EARNERS

We know quite a lot about how those on low earnings respond to incentives in the tax and benefit system. We know less about higher earners in general, though we do know that across the earnings distribution, labour supply adjustments seem to occur mainly at older ages, around retirement, and, for women, during years of child-rearing. For other groups, and particularly perhaps for the highest earners, less of their response to the tax system seems to be about changes in labour supply, and more of it about changes in taxable income. This might arise through effort being put in to avoiding (or evading) tax payments, or even through decisions over whether or not to locate in this country. Labour supply seems to be relatively inelastic for the most part; but recent evidence suggests that taxable income elasticities remain positive and significant throughout the earnings distribution.[22]

For some, short-run labour supply responses might well be less important than longer-term choices over, for example, education, training, and occupation. These relationships, while likely to be important, have proven harder to estimate empirically.[23]

The level of uncertainty about the way in which people in the middle of the earnings distribution respond to tax changes makes it difficult to fine-tune delicate trade-offs of the kind discussed in the previous section.

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[22] Chetty, 2009.
[23] Heckman, Lochner, and Taber, 1999.

The government can change how it raises a given amount of revenue by adjusting the tax-free personal allowance, the basic and higher rates of income tax, the higher-rate threshold, and the equivalent NICs rates and thresholds. In doing so, it can, albeit with limited knowledge, trade off the degree of progression against concerns over work incentives and long- and short-run taxable income elasticities. In general, raising allowances will be more progressive than cutting the basic rate of tax, and much more progressive than cutting the higher rate. On the other hand, higher marginal rates above the personal allowance could have negative effects on incentives to earn more. Note that within the tax system itself, little can be done for the very poorest. Around a quarter of adults live in households where nobody has a high enough income to pay tax.[24]

Two specific features of the income tax schedule merit further comment: the complexity of the rate schedule and the taxation of the very highest earners.

4.3.1. A Straightforward Income Tax Schedule

A basic requirement for any system of taxing earnings is that the rate schedule should be transparent. The UK tax system is far from meeting that requirement, and reforming income tax itself would be a good place to start.

The biggest offender is the tapering-away of personal allowances as income rises. At present, the extra personal allowances available to those aged 65 or over (and 75 or over) are reduced by 50p for each £1 of income above £22,900, so that the personal allowance for people of 65 or over is the same as that for under-65s once income is above £28,930 (£29,230 for those aged 75 or over). Many people are unaware of this; far more do not realize that it is equivalent to applying a 30% marginal income tax rate in this income range.[25] Similarly, from 2010–11, the main personal allowance is reduced by

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[24] Adam, Browne, and Heady, 2010.

[25] In fact, for married couples and civil partners aged 75 or over, there is an added complication: they can claim a married couple's allowance, which reduces their tax liability by £696.50; this is reduced by 5p for every £1 of income above £29,230 until it reaches a minimum

Table 4.5. Income tax schedule for those aged 65–75, 2010–11

Income range	Marginal income tax rate (%)
£0–£9,490	0
£9,491–£22,900	20
£22,901–£28,930	30
£28,931–£43,875	20
£43,876–£100,000	40
£100,001–£112,950	60
£112,951–£150,000	40
£150,001+	50

50p for each £1 of income above £100,000 until it is eliminated entirely once income reaches £112,950. That is equivalent to a 60% income tax rate in this range.

If setting these effective tax rates is the objective, then it should be explicit in the marginal rate schedule, not described opaquely as a phased withdrawal of the personal allowance: this peculiar mechanism serves no purpose except to obscure what the tax system is actually doing. Table 4.5 shows the effective income tax schedule for someone aged between 65 and 75, for whom both allowances can be tapered.[26] We doubt that many ministers and officials

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of £267.00 at incomes of £37,820. This in effect applies a 25% marginal income tax rate between £29,230 and £37,820—though only for the lower-income spouse, since couples can choose which of them claims the allowance (or can claim half each) and so can always save by allocating it to the lower-income spouse if only one has income above £29,230. The absurdity and obscurity of this situation speak for themselves.

[26] Even Table 4.5 is a simplification of the true position. The 10% starting rate of income tax was not completely abolished in 2008–09: it remains in place, but only for savings income and only where that savings income, treated as the top slice of income except for dividends, falls into the first £2,440 of income above the personal allowance. Again, describing this situation in detail is perhaps the best way of illustrating how ridiculous and indefensible it is.

within government are consciously aware they are inflicting this absurd tax schedule, let alone that many taxpayers understand it.

There is little chance that Table 4.5 describes an optimal schedule—though it is not necessarily the case that an optimal income tax schedule is a very simple one, at least if we put to one side issues of practicality. When defining the tax *base*, applying similar tax rates across the board tends to achieve not only simplicity but also efficiency, as it minimizes distortions to the form of economic activity.[27] When setting the *rate* schedule, there is no such presumption. As we described in the last chapter, optimal tax theory prescribes how the tax rate at each level of earnings should depend on factors such as the number of people at that level of earnings and their responsiveness to tax rates, as well as the degree of concern for redistribution. If those factors vary by earnings in a complicated way, the optimal income tax rate schedule could be complicated, and there is certainly no reason to expect a single marginal rate of tax at all levels of earnings to be optimal.

Yet even if the theoretically optimal rate schedule were to be a complicated function of earnings, it is generally possible to approximate such a schedule closely with just two or three rates and an allowance: a great variety of outcomes can be achieved with relatively few tools. A 'flat tax', with just one marginal rate above a personal allowance, is unnecessarily inflexible, so having separate basic and higher income tax rates does serve a useful purpose. A case could conceivably be made for a third tax band above the personal allowance (such as the 50% tax rate on the highest incomes that was introduced in 2010–11). But beyond that, adding more bands and rates achieves nothing that could not be approximated almost exactly by adjusting the rates and thresholds of a relatively simple system. For example, the starting rate of tax that was in place between 1992–93 and 2007–08 achieved a pattern of payments that could have been replicated almost perfectly by extending the personal allowance to cover the bottom part of that band and applying the basic rate of tax to the top part. Certainly a system as

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[27] Economic theory can suggest ways in which departing from uniformity could enhance economic efficiency, and we discuss such arguments (and whether any increase in economic efficiency justifies the associated complexity) in later chapters. Nevertheless, a presumption in favour of uniform taxation is generally a good rule of thumb.

convoluted as that shown in Table 4.5, with tax rates rising and falling seemingly at random, is patently absurd.

The income tax schedule is clearly more complicated than it needs to be. But the rate schedule for earnings taxation as a whole is far more complicated than that for income tax alone, because it consists of many different components which do not fit together harmoniously. To take the simplest example, the thresholds for income tax and NICs are not aligned with each other, so the two taxes in combination have several more bands than income tax alone. Once tax credits and benefits are brought into the equation as well, the complexity becomes quite bewildering, and seemingly arbitrary patterns of effective tax rates proliferate. That is just one reason to address the interaction between the different elements of earnings taxation—something to which we devote the next chapter.

4.3.2. The Top Tax Rate

From 2010–11, a new 50% rate of income tax applies to incomes above £150,000. The government estimates that this directly affects only 275,000 individuals, out of an adult population of about 49 million. Yet the income tax rate applying to the very highest earners has an importance out of proportion to their numbers, simply because they are such an important source of revenue: even before this reform took effect, a quarter of income tax was paid by the top 1% of income tax payers, just over 300,000 individuals.[28] That is a fact worth repeating. One pound in every four collected by the income tax system comes from just 1% of income tax payers. Of course, this largely reflects just how much more pre-tax income the top 1% of taxpayers earn than the bulk of the population do.

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[28] Sources: For the number facing the 50% income tax rate—HMRC statistics, table 2.1, http://www.hmrc.gov.uk/stats/income_tax/table2-1.pdf; for the top 1%'s share of income tax revenue—HMRC statistics, table 2.4, http://www.hmrc.gov.uk/stats/income_tax/table2-4.pdf; for total population—ONS 2008-based national population projections, http://www.statistics. gov.uk/downloads/theme_population/NPP2008/NatPopProj2008.pdf; for the number of dependent children in the population—HMRC, *Child Benefit Statistics: Geographical Analysis, August 2010*, http://www.hmrc.gov.uk/stats/child_benefit/chb-geog-aug10.pdf.

As noted in the previous chapter, the responsiveness of taxable income, and hence tax receipts, to tax rates may be quite high at the top of the earnings distribution—not because high earners' employment decisions or hours of work are particularly responsive, but because they may find other ways to minimize the amount of tax they pay: by reducing their effort per hour worked or by, for example, changing the form of their remuneration, contributing more to a pension or to charity, converting income into capital gains, setting themselves up as a company, investing in tax avoidance, illegally hiding their income, or even leaving the country altogether (or not coming here when they otherwise would have).

In fact, it is not clear whether the 50% rate will raise any revenue at all. There are numerous ways in which people might reduce their taxable incomes in response to higher tax rates; at some point, increasing tax rates starts to cost money instead of raising it. The question is, where is that point? Brewer, Saez, and Shephard (2010) addressed precisely this question for the highest-income 1%. Their central estimate is that the taxable income elasticity for this group is 0.46, which implies a revenue-maximizing tax rate on earned income of 56%.[29] This in turn (accounting for NICs and indirect taxes) corresponds to an income tax rate of 40%. So, according to these estimates, the introduction of the 50% rate would actually reduce revenue.[30]

However, there is no escaping the uncertainty around the estimate of a 40% revenue-maximizing income tax rate. It was based primarily on what happened to incomes when tax rates changed in the late 1980s; but people's ability to respond to tax changes may well have changed since then. Increases in international mobility and in the availability of complicated financial products may have increased people's scope to respond, while a succession of anti-avoidance measures may have reduced it. Changes to capital gains tax have at different times made it easier and harder to escape tax by converting income into capital gains.[31] And the government increased the likely yield of the 50% income tax rate by also announcing a limit on the tax relief that high

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[29] Brewer and Browne, 2009.

[30] Increases in rates of NICs and VAT announced since this analysis was done will further reduce the income tax rate that corresponds to a given overall tax rate on earnings.

[31] We return to this issue in Chapter 19.

earners can obtain by saving their income in a pension.[32] So the elasticity might have risen or fallen. And even if nothing had changed since the late 1980s, statistically there was only a two-thirds chance that the revenue-maximizing rate was somewhere between 33% and 57%.[33]

So we do not know with confidence what the revenue-maximizing top tax rate is. But governments do not have the luxury of stopping there: policy must be decided, so, in the absence of compelling evidence, they must take a best guess. The Treasury's best guess is that the 50% rate will raise some revenue. That is certainly not impossible, but it is certainly uncertain.

Whatever the precise revenue-maximizing tax rate, it seems unlikely that much additional revenue can be raised simply by increasing the income tax rate for the very highest earners. But it is important to realize that this is not the only tool available for extracting money from this group. Widening the income tax base—removing reliefs and clamping down on avoidance—not only raises money directly but also reduces the scope for shifting income into tax-free forms and thereby makes tax rate increases more effective revenue-raisers. And there are, of course, other taxes aimed at the wealthy (notably inheritance tax), which might have the potential to raise revenue.

In addition, we should not forget that the revenue-maximizing rate is itself not necessarily the rate that we should impose on this group. If we value their welfare at all, or have concerns over long-term behavioural effects, then we might want a rate below the revenue-maximizing rate in any case.

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[32] An issue to which we return in Chapter 14.

[33] Brewer and Browne, 2009. The estimate of the revenue-maximizing top tax rate also relies on two other debatable assumptions. The first is that, were it not for tax changes, the incomes of the top 1% would have evolved in the same way as those of the next-richest 4%, which we cannot know. The second is that any reduction in taxable income would be matched one-for-one by a reduction in spending (and therefore indirect tax revenues)—likely to be broadly accurate if the reduced taxable income reflected a real reduction in economic activity in the UK (less work effort or less net immigration, for example), but not if it reflected more tax avoidance or evasion, say.

4.4. TARGETING INCENTIVES AT DIFFERENT POINTS IN THE LIFE CYCLE

In Section 3.4, we argued that redistribution could be achieved more efficiently by varying tax rates by characteristics that are known to indicate people's ability, needs, or responsiveness to taxation—the approach known as tagging. We also noted that tagging can potentially have disadvantages in terms of complexity, infringement of privacy, and incentives to acquire whatever characteristics are used, and that the use of some characteristics would be widely ruled out as constituting improper discrimination.

In this section, we look at two examples of policies designed to focus on particular groups that exhibit the advantages while suffering few of the disadvantages. They are based on using information about the ages of family members: specifically, applying lower effective tax rates to families whose youngest child is of school age, and to those around retirement age, than to others. We have strong evidence that labour supply is particularly responsive at these points in the life cycle, which makes reducing effective tax rates at those points a powerful tool.

Governments in the UK and elsewhere already vary tax and benefit payments according to these characteristics. The reforms would raise few new problems of privacy or improper discrimination, and our illustrative reforms add little if any complexity to the existing system. In addition, age cannot, of course, be changed in response to incentives (though the timing of childbearing can be). But while tax and benefit payments currently vary with the ages of family members, they do so in a way that does not make best use of what we know about people's responsiveness, so significant improvements are available, increasing labour supply without being any less progressive overall. Targeting particular points in the life cycle also means that what distributional effects there are can in large part be thought of as shifting resources over a family's life cycle rather than between different families.

4.4.1. Age of Youngest Child

Mothers' decisions over whether and how much to work are more responsive to incentives when all their children are of school age than when

they have a child under 5 years old.[34] The tax and benefit system should provide stronger work incentives for people who are more responsive to them: we can afford to redistribute more from rich to poor among less responsive groups, because the damage that redistribution does to work incentives is less important for them than for more responsive groups. So a simple way of tilting the system to reflect the differential responsiveness of parents with children of different ages is to make Child Tax Credit more generous (and so means-testing more extensive) for families with any children under the age of 5, and less generous (with less means-testing) for families whose youngest child is aged 5 or older.

In 2009–10, one revenue-neutral reform (assuming no behavioural change) would have been to increase the child element of CTC from £2,235 to £3,100 where the youngest child in a family was under 5 while reducing it to half that, £1,550, where the youngest child was 5 or older.[35]

Figures 4.13 and 4.14 show how average work incentives were already somewhat stronger for families with older children, and how this reform would make the differential greater. For parents with older children, this reform reduces average PTRs by about 1 percentage point and average EMTRs by a similar amount. There would be a corresponding weakening of work incentives for parents with pre-school children: their average PTR would rise by 1.0 percentage point and their average EMTR by 1.5 percentage points. But we would expect this group to respond less to these weakened incentives than the parents of older children would respond to their strengthened incentives. We estimate that some 72,000 parents of older children would enter work, while only 21,000 parents of younger children would stop work: an overall increase of 52,000, or roughly 0.2% more workers. Those working more have lower average wages than those working

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[34] Blundell and Shephard (2011) find that the elasticity of employment for single mothers in the UK is 0.85 when their youngest child is aged 5 or older, compared with around 0.5 for those with younger children.

[35] Our modelling also includes a symmetric reform to child additions to Housing Benefit and Council Tax Benefit. Otherwise, the effect of the reform would be severely dampened for families facing withdrawal of these benefits as any increase (reduction) in CTC would be offset by a reduction (increase) in these benefits. This is typical of the kind of complication that could be removed by benefit integration, as discussed in the next chapter.
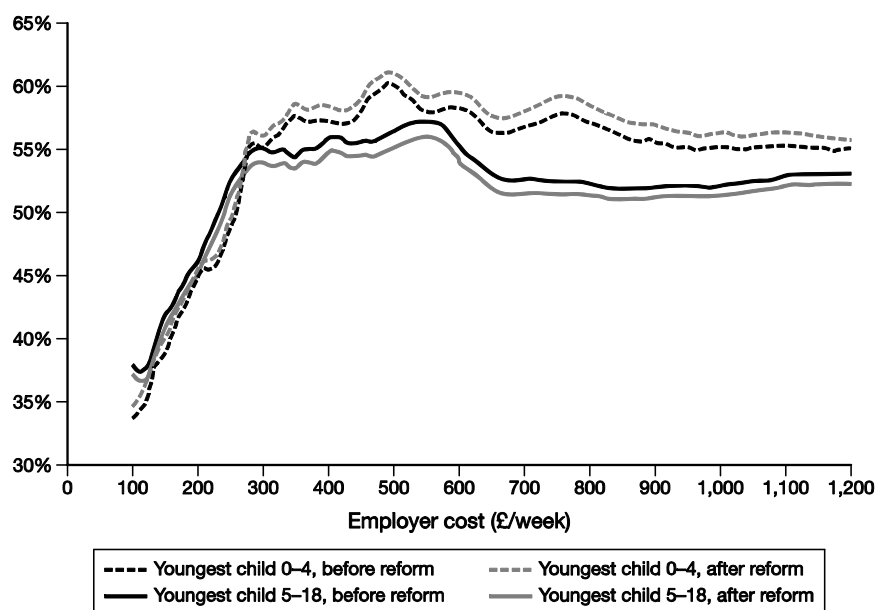
Figure 4.13. Effect of reform on average PTRs across the earnings distribution, by age of youngest child

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

less, so aggregate earnings (including employer NICs) would increase by somewhat less—about 0.1% or £0.8 billion, of which about £0.5 billion would accrue to households and £0.3 billion to the Exchequer.

Policymakers will have regard to more than just the effects of reforms on work incentives. In particular, they are likely to be concerned with distributional effects. In any given year, this reform clearly redistributes from parents with older children to parents with younger children, taking about £1.5 billion per year from the latter group and giving it to the former. But this is largely redistribution over the life cycle: since everyone's children start off aged 0 and get older, what families gain when the children are young will
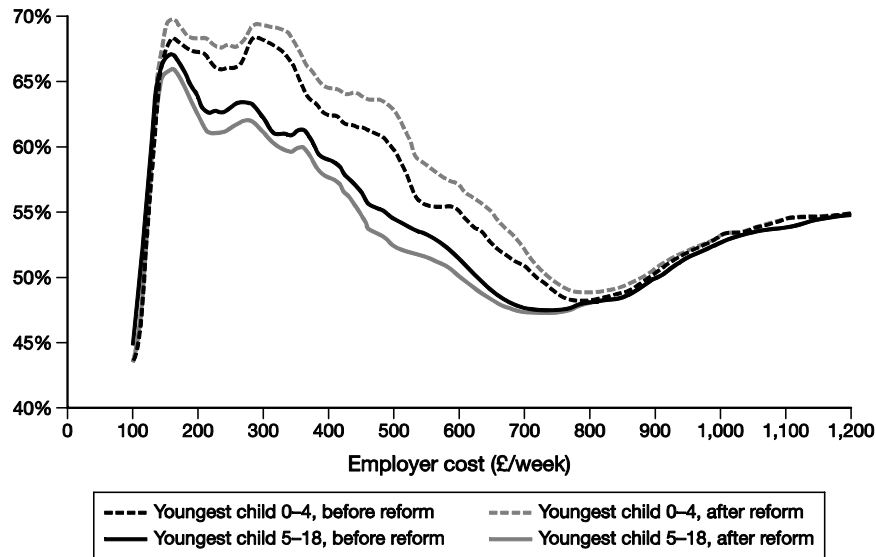
Figure 4.14. Effect of reform on average EMTRs across the earnings distribution, by age of youngest child

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

generally offset what they lose when the children are older. A government introducing a reform like this could consider increasing the rate for young children a few years before reducing that for older children, so that families suffered from the cut only if they previously benefited from the increase.

Of course, the distributional picture is slightly more complicated than merely bringing forward a given amount of support. Families might have too much income to qualify for tax credits when their children are older but not when their children are younger (or, less likely, vice versa). Effects will also vary if marital status changes and according to how spread out the ages of children in the family are. Nevertheless, for many families the main effect would be that support was received earlier on, an effect that might be rather

helpful given evidence that spending on children is more valuable when the children are young.[36]

4.4.2. Retirement Age

Continuing in the same vein, there is powerful evidence that people's decisions about whether and how much to work become much more responsive to financial incentives when they are around retirement age—roughly 55–70.[37] It may therefore be more important to keep work incentives strong for people in this age range than for those in their 30s, 40s, and early 50s.

Older workers already tend to have somewhat stronger work incentives, partly because they are less likely to have dependent children and so to face losing Child Tax Credit if they work (or increase their earnings). If we were to target means-tested support on families with younger children, as advocated in the previous subsection, this would also strengthen work incentives for parents in the 55-plus age range, whose children are typically older.

But it is possible to focus incentives on older workers more directly. The tax and benefit system already contains several important features that change around retirement age and thereby transform the effective tax rates that individuals face:[38]

- Employee and self-employed NICs stop being payable at state pension age (currently 65 for men, and in the process of rising from 60 to 65 for women by 2018 and then to 66 for both men and women by 2020).

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[36] See e.g. Heckman (2006) and Fiszbein and Schady (2009). Note, however, that these studies are concerned not with simple financial support, but with education policy or with *conditional cash transfers*—financial support provided on condition of 'good behaviour' by the parents.

[37] Gruber and Wise, 1999 and 2004.

[38] Another age-related feature is due to take effect in April 2011: the 2009 Pre-Budget Report announced that those aged 65 or over will be required to work for only 16 hours per week, rather than 30, to be eligible for Working Tax Credit. This will encourage people to work part-time rather than retiring, but also to work part-time rather than full-time.

- The income tax personal allowance rises substantially (from £6,475 to £9,490) at age 65[39]—with this extra allowance reduced by 50p for each £1 of income above £22,900.

- Income Support and JSA are replaced by the much more generous Pension Credit at the female state pension age, becoming even more generous at age 65.

For illustrative purposes, we consider simply changing the age at which each of these changes takes place so as to strengthen work incentives for 55- to 70-year-olds, in each case raising the money required (or spending the money generated) by a roughly mirror-image reform for under-55s. Thus the reform we model is to:

- end employee and self-employed NICs at age 55, rather than at state pension age; this would cost £5.2 billion, paid for by increasing the main rates of employee and self-employed NICs by 1.2 percentage points for those (aged under 55) who would still be paying them;

- apply the higher personal allowance from age 55 rather than 65, meeting the £1.7 billion cost by reducing the personal allowance from £6,475 to £6,145 for under-55s;

- raise the age requirement for receiving Pension Credit to age 70, using the £3.1 billion raised to increase rates of Income Support and JSA by 19%.[40,41]

Obviously, there are other possible reforms, including reforms that would be revenue neutral within the 55–70 age group. In the reform we have illustrated, the combination of changes would mean gains for 55- to 70-year-olds on average, at the expense of under-55s, in any one year. But the pattern depends strongly on income. The rate schedule for 55- to 70-year-olds would

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[39] Rising further to £9,640 at age 75.

[40] As in the previous subsection, our modelling also includes symmetric reforms to Housing Benefit and Council Tax Benefit to prevent these benefits offsetting the changes for many families.

[41] In fact, much of this increase in the age requirement for Pension Credit is already due to happen as the female state pension age rises from 60 to 66 between 2010 and 2020. The 2007 Pensions Act also provides for the state pension age and Pension Credit age to rise further to 68 by 2046, although the coalition government has said that it will bring forward proposals 'to manage future changes in the State Pension Age more automatically' (HM Treasury, 2011).

become less progressive, with those on low incomes losing and those on higher incomes gaining, while the rate schedule for under-55s would become more progressive, with non-workers on low incomes gaining and those on higher incomes losing.

Since the reduction in the progressivity of the tax and benefit schedule for 55- to 70-year-olds is mirrored by an increase in progressivity for under-55s, there would be little change in the progressivity of the system as a whole. Nevertheless, this reform undoubtedly involves big changes to the tax and benefit payments of each family at each point in time: more than half of families would gain or lose more than £5 per week. But, as with the reform in the previous subsection, these distributional effects look less stark when considered in a life-cycle perspective. For many people, what they lost (or gained) when aged under 55 they would later gain (or lose) when aged 55–70: much of the redistribution is over the life cycle rather than between groups. This would not be true for everyone: those experiencing lengthy
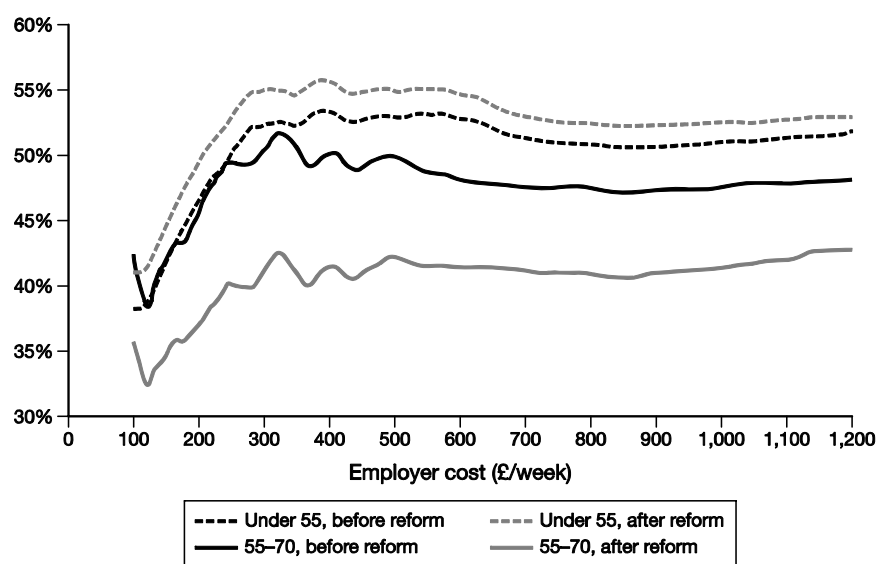

Figure 4.15. Effect of reform on average PTRs across the earnings distribution, by age

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.
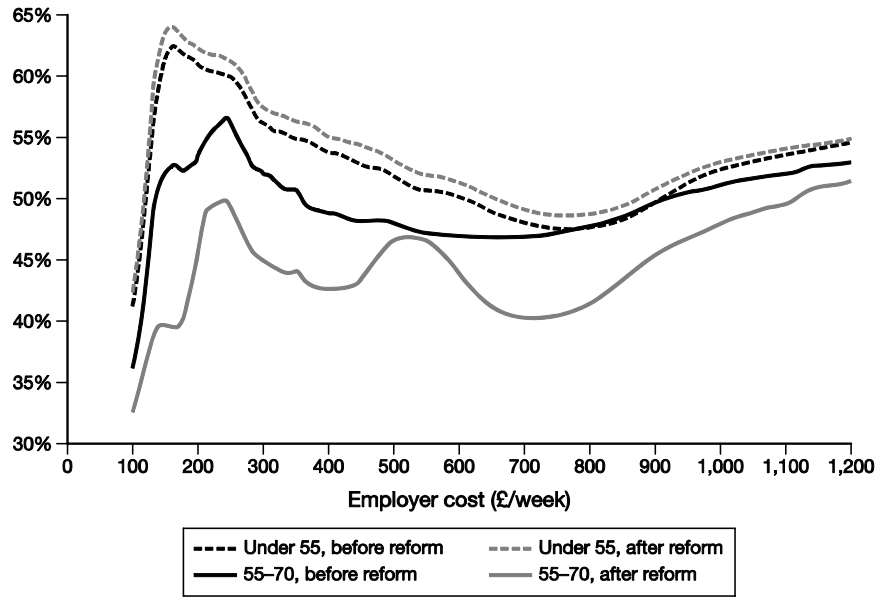
Figure 4.16. Effect of reform on average EMTRs across the earnings distribution, by age

Notes: Non-parametric regression (lowess) estimates. Reform as described in the text. Employer cost = Gross earnings + Employer NICs.

Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on uprated data from the 2006–07 Family Resources Survey, and using estimated consumption tax rates from the 2007 Expenditure and Food Survey.

spells out of work and on low incomes but then earning a good living later in life would gain significantly, while those earning decent salaries but then falling into low income later in life would lose. But certainly the large number of people gaining or losing large amounts at any given point in time dramatically overstates the long-run distributional impact of the reform.

Figures 4.15 and 4.16 show what effect this set of reforms would have on average PTRs and EMTRs of under-55s and of 55- to 70-year-olds earning different amounts. For 55- to 70-year-olds, both incentives to stay in work at all and incentives to earn more are strengthened right across the earnings distribution, and this strengthening is marked: the mean PTR falls by 7.0 percentage points and the mean EMTR by 5.3 percentage points. There is a smaller weakening of incentives for under-55s, but the effect hits far more people (the mean PTR and EMTR rise by 2.2 and 1.2 percentage points respectively).

We estimate that these reforms could lead to a net increase in employment of around 157,000, or 0.6% of the workforce—the balance of 535,000 more 55- to 70-year-olds and 378,000 fewer under-55s in work, although in practice such a large shift would not happen overnight. Aggregate earnings (including employer NICs) would increase by £1.9 billion, or 0.3%. In fact, households' purchasing power would increase by £2.5 billion and the Exchequer would lose £0.7 billion: this is because, as shown in Figures 4.15 and 4.16, effective tax rates are lower for those aged 55–70 than for under-55s, so the government would collect less revenue from the extra work the older people do than it would lose from the reduction in work among under-55s.

This illustrative reform is limited to changing rates and thresholds within the existing tax and benefit system. No new complexities are introduced. If this particular reform looks difficult, alternatives could readily be devised, such as a more generous Working Tax Credit for those aged 55 or over.[42] Given how many of those who stop working before state pension age move onto disability benefits rather than retiring (see Section 3.1), the design of these benefits is another area worthy of attention. But the design of disability benefits is beyond the scope of this book. Our intention here is merely to illustrate the potential advantages of ensuring work incentives are strong at this critical point in the life cycle.

As a broad direction for reform, we do think that the changes in tax and benefit rates that take effect as people enter their later years could take better account of what we know about people's responsiveness around retirement age. It seems particularly perverse that Pension Credit provides a large increase in the level of out-of-work support available at exactly the time that people's decisions as to whether to continue working are most sensitive. If the distributional implications are considered acceptable, the process currently in train to increase the age at which Pension Credit becomes

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[42] There is already a 50+ bonus in WTC, but it is payable only to those who move off benefits into work and only for a year, and the June 2010 Budget announced its abolition from April 2012. Note that increasing WTC does not unambiguously strengthen work incentives because it reduces second earners' incentives to be in work and it increases the number of people facing high EMTRs through tax credit withdrawal.

available from 60 to 66 (and then beyond) is very much a move in the right direction.

4.5. CONCLUSIONS

The shape of the rate schedule is the most political part of the tax system— the forum in which different views about the trade-off between achieving higher average living standards and achieving a more equal distribution of living standards play out. Indeed, we see direct taxes and benefits as the key part of the system for achieving the redistribution society desires. But we are deliberately not making recommendations over just how progressive the system should be. It is straightforward to see how more or less progressivity could be introduced. We have focused instead on how to maximize the efficiency with which redistribution is achieved, by minimizing disincentives where they matter most.

Designing a rate schedule is hard, and, for all the criticisms in this chapter, the overall rate schedule faced by most people in the UK is a lot less bad than it could be: almost nobody faces an effective marginal tax rate above 100% (it wasn't always thus), and, to a significant extent, it is already true that effective tax rates are lower for more responsive groups. Nevertheless, there is considerable scope for improvement.

The income tax schedule could be made simpler by abolishing the practice of tapering away allowances: the bizarre pattern of rising and falling marginal rates it creates is patently absurd, and the obscure language of tapered allowances only serves to hide that absurdity from the public.

The choice of income tax rate for top earners depends partly on political preferences: how much one values, or objects to, the satisfaction the rich derive from getting even richer. Even if the only thing that mattered were the amount of revenue raised, we know rather little about what the right level of the top rate should be. But without base-broadening, a 50% top income tax rate is at the upper end of what estimates suggest might maximize tax receipts.

At the other end of the income scale, there is a case for saying that PTRs are too high for many low earners—their gain from entering work is too low.

This could be addressed by means-testing less aggressively: we examined one option, which involved having much larger earnings disregards in benefits and tax credits, separate disregards for first and second earners, and a lower tax credit withdrawal rate, along with more generous Working Tax Credit. There are major disadvantages to this approach. It would involve a significant extension of means-testing, which has practical disadvantages over and above the disincentive it implies for working families to increase their earnings. And it would cost money, which could only come from some combination of tax rises (weakening work incentives for those affected) or benefit cuts (which make the poorest worse off). But if these disadvantages can be borne, it does look possible to achieve a sizeable increase in employment rates. The trade-offs are finely balanced.

We can more confidently recommend changes to the way in which the tax and benefit system affects families with children of different ages and people around retirement age. Reforms are available that could improve economic efficiency by minimizing work disincentives for those most responsive to them. Specifically, we recommend that work incentives should be strengthened for parents whose children are of school age and for older workers, perhaps balanced by weakening them for other groups, and we have illustrated ways in which this could be achieved.

There remain many things that we do not know about the precise effects of taxing earnings, and especially the longer-term effects, such as on education and career choices. These might be important and should not be ignored— for example, the fact that observed hours of work seem to be unresponsive to taxation for large sections of the population does not necessarily mean that their tax rates can be increased indefinitely with no loss to the economy. The important point is that system design needs to remain sensitive to what we do know about how people respond to incentives, even if in some cases that is frustratingly little.