

Shaw, Jonathan

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FORTAX: UK tax and benefit system documentation

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FORTAX: UK tax and benefit system documentation

IFS Working Paper 08/11

Jonathan Shaw

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Jonathan Shaw[†]

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Abstract

This document describes the UK tax and benefit system between April 1990 and April 2010, as implemented in FORTAX, a microsimulation library written in Fortran. It begins with an overview of FORTAX and the information it calculates. Subsequent sections describe the taxes and benefits implemented in FORTAX, noting where simplifications have been made. An appendix lists values of the major tax and benefit parameters over time.

1 Introduction

1.1 Overview

FORTAX is a Fortran micro-simulation tax library that implements the UK tax system for the period April 1990 to April 2010. FORTAX performs many of the same functions as TAXBEN, the IFS's main tax and benefit simulation program. The main differences are that it is simpler (implementing only the main working-age benefits and taxes), faster, and written in Fortran rather than Object Pascal.

A basic call to FORTAX involves passing family characteristics (in `fam`) and a tax system (in `sys`) to the subroutine `calcNetInc`, which then returns its calculations (in `net`):

```
call calcNetInc(sys,fam,net)
```

This document describes `sys`. In other words, it describes the UK tax systems implemented in FORTAX. The aim is to provide enough detail so that calculations can be replicated manually. For readability, some liberties

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[†]IFS and UCL

are taken in the description of parameters and the presentation of formulae relative to how they actually appear in FORTAX. Throughout this document, variables and parameters that appear directly in FORTAX are in a `typewriter` font. Procedure names are given in section headings. An appendix sets out the values of the main parameters of the UK tax and benefit system. Monetary values are weekly amounts in nominal terms.

Tax systems are stored as individual system files. Reforms take place too frequently for it to be sensible to provide a system file after every single reform. Instead, a system file exists for each April (when standard uprating usually takes place) and, from 1999 onwards, for each autumn. Nevertheless, actual reform dates are given throughout the document.

In what follows, the word ‘family’ is used to mean an individual together with his/her partner (if there is one) and any dependent children. (In the benefit system, a family is often referred to as a ‘benefit unit’). The word ‘household’ is used to mean all individuals living at a particular address. A household may, therefore, contain more than one family. Most taxes are assessed on an individual basis and most benefits are assessed at the family level.

The main sources for this document are IFS surveys of the UK tax and benefits systems (e.g. Adam and Browne, 2009, and Levell et al 2009), various editions of the *Welfare benefits and tax credits handbook* produced by the Child Poverty Action Group (e.g. CPAG, 2010), the Treasury’s *Tax benefit reference manual* (HM Treasury, 2009), the Department for Work and Pensions’ *Work and pensions statistics* (DWP, 2004), and annual *Social security benefit up-rating order* legislation (set out in the list of regulations). Other sources are listed in the references.

1.2 Omissions and simplifications

FORTAX provides a detailed implementation of the UK tax system. Nevertheless, it makes a number of important omissions and simplifications:

Individuals aged 60 or over The UK tax system treats pensioners somewhat differently from the rest of the population (e.g. higher income tax allowances for those aged 65+ and 75+). FORTAX ignores all tax and benefit rules relating to individuals aged 60 or over. FORTAX also excludes all pensioner-specific benefits (e.g. the basic state pension and pension credit)

Disability FORTAX takes no account of sickness and disability, ignoring all benefits specifically for the sick or disabled (e.g. incapacity benefit and disability living allowance), as well as all allowances and premiums for sickness and disability elsewhere in the tax system (e.g. the blind person’s allowance in income tax and disability elements in tax credits)

Non-dependants Benefit entitlements are affected by the presence of ‘non-dependants’ in the household (individuals who are not part of the family for benefit purposes, e.g. adult children or flatmates). FORTAX ignores this (except in the case of council tax, which is explicitly a household-level tax).

Conditionality Some benefits can only be received if certain activities are performed (e.g. searching for a job in the case of jobseeker’s allowance). FORTAX assumes all such activities are undertaken

Evasion of taxes and non-take-up of benefits FORTAX assumes individuals and families pay the taxes they owe and receive all the benefits and tax credits to which they are entitled

Payment period All awards and liabilities are calculated on a weekly basis regardless of the actual payment period (e.g. the income tax system is annual).

Transitional protection Policy reforms often include provisions to limit losses to existing claimants. This often takes the form of allowing existing claimants to continue claiming under the old system. FORTAX ignores all such transitional protection.

Pension contributions FORTAX ignores tax relief available for pension contributions: all earnings are subjected to income tax and National Insurance

Taxation of non-earnings income Interest on savings is subject to income tax, as are some benefits (though none that are calculated by FORTAX). FORTAX ignores this.

Savings Most benefits and tax credits either limit the amount of savings (‘capital’) individuals are allowed to hold, or impute an income stream from savings that is included in the means test. FORTAX ignores savings altogether.

Domestic rates in Northern Ireland Local taxation is different in Northern Ireland: when the rest of the UK introduced the community charge and then council tax in the early 1990s, Northern Ireland stuck with the previous system of domestic rates. FORTAX ignores this, assuming Northern Ireland made the same reforms as the rest of the UK.

Contributory JSA Unemployment benefit for those who meet certain National Insurance contribution conditions is called contributory jobseeker’s allowance (JSA). It can only be received for up to six months. FORTAX ignores it.

Employer taxes FORTAX ignores all taxes formally incident on employers, such as employer National Insurance and corporation tax.

Indirect taxes FORTAX ignores all indirect taxes, including VAT, excise duties and fuel duties.

Benefits in kind In the UK system, some benefits are provided in kind rather than as cash. This includes things such as free school meals, eye tests and prescriptions. The only in-kind benefit included in FORTAX is free school meals.

1.3 Calculation overview

In this section, we describe how the main tax, benefit and disposable income variables stored in `net` are calculated.

Since the advent of independent taxation in April 1990, taxes have largely been levied at an individual level whereas benefits and tax credits have been awarded at the family level. There are exceptions to this, however, such as the married couple allowance (which is part of income tax, but is for couples).

Post-tax disposable family income is stored in `net%tu%dispinc` and is calculated by the subroutine `calcNetInc` as:

$$\text{net\%tu\%dispinc} = \text{net\%tu\%pretax} - \text{net\%tu\%tottax}$$

where `net%tu%pretax` is pre-tax family income and `net%tu%tottax` is the family's total taxes net of benefits and tax credits. The former is calculated as:

$$\text{net\%tu\%pretax} = \text{fam\%ad(1)\%earn} + \text{fam\%ad(2)\%earn} + \text{fam\%maint}$$

where `fam%ad(i)%earn` is individual *i*'s earnings and `fam%maint` is maintenance received by the family. `net%tu%tottax` is defined as:

$$\text{net\%tu\%tottax} = \text{tax} - \text{benefits}$$

where tax and benefits are:

$$\begin{aligned} \text{tax} &= \text{net\%ad(1)\%natins} + \text{net\%ad(2)\%natins} \\ &+ \text{net\%ad(1)\%inctax} + \text{net\%ad(2)\%inctax} \\ &+ \text{net\%tu\%ctax} + \text{net\%tu\%polltax} \\ \text{benefits} &= \text{net\%tu\%chben} + \text{net\%tu\%fc} + \text{net\%tu\%wtc} \\ &+ \text{net\%tu\%ctc} + \text{net\%tu\%incsup} + \text{net\%tu\%matgrant} \\ &+ \text{net\%tu\%fsm} + \text{net\%tu\%hben} + \text{net\%tu\%polltaxben} \\ &+ \text{net\%tu\%ctaxben} \end{aligned}$$

and where `inctax` is income tax liability, `natins` is National Insurance liability, `ctax` is council tax liability and `polltax` is community charge (‘poll tax’) liability. `chben` is child benefit, `matgrant` is maternity grant, `fc` is family credit/working families’ tax credit, `wtc` is working tax credit, `ctc` is child tax credit, `incsup` is income support, `fsm` is free school meals, `hben` is housing benefit, `ctaxben` is council tax benefit and `polltaxben` is community charge benefit.

Components of tax and benefits cannot be calculated in any order because some count as income in the means test for others (e.g. child benefit counts as income in the calculation of housing benefit). Calculating components in the order they appear in the formulae is sufficient.¹ The following sections describe how each component is calculated.

1.4 Key reform dates

Tax and benefit thresholds and amounts are usually uprated each April, though the precise date on which this happens varies across taxes and benefits (e.g. income tax thresholds are uprated on 6 April (the start of the new tax year), child benefit goes up on the first Monday of the new tax year, and council tax benefit increases from 1 April). But benefit increases have also sometimes taken place at other times in the year (e.g. child benefit was increased from 5 January 2009). As far as possible, exact dates are given in Appendix A.

There have also been a few bigger changes to the tax and benefit system since April 1990. Table 1 lists only those that create substantial discontinuities relative to the previous system, and standard uprating rules. This is obviously a subjective judgment, but the table nevertheless gives a reasonable indication of when the main reforms took place.

2 National Insurance (`natIns`)

2.1 Overview

National insurance contributions (NICs) are payroll taxes paid by employees and employers on earnings, and by the self-employed on profits. Individuals who have made sufficient contributions are entitled to certain ‘contributory’ transfer payments (e.g. contributory jobseeker’s allowance), though this link has significantly weakened over time. FORTAX does not model any contributory transfer payments.

FORTAX ignores employers’ NI. Employees and the self-employed are subject to different NI regimes, as described below. It is necessary to calculate NI before income tax because the rebate for Class 4 contributions

¹FORTAX is not quite in this order: in this document, components have been slightly reordered for expositional ease.

Table 1: Major reforms to the UK tax system since April 1990

Date	Reform
01/04/93	Community charge and community charge benefit replaced by council tax and council tax benefit
06/04/99	Income tax 10p starting rate band introduced; Class 1 National Insurance entry fee abolished
05/10/99	Family credit expanded and rebranded working families' tax credit
06/04/03	Working families' tax credit and some other child-related parts of the tax system replaced by working tax credit and child tax credit
06/04/08	Income tax 10p starting rate band abolished
06/04/10	Income tax 50p top rate introduced

between April 1985 and April 1995 reduces taxable income. NI parameters are defined in `sys%natins` and are listed in Table 4 in Appendix A. Parameters are updated annually to coincide with the start of the tax year. The subroutine `natIns` calculates the NICs of adult `i` in family `fam` and stores class 1, 2 and 4 contributions in `net%ad(i)%natinsc1`, `net%ad(i)%natinsc2` and `net%ad(i)%natinsc4`. The sum of these is then stored as `net%ad(i)%natins`.

2.2 Employees

Employees are liable for Class 1 contributions. The amount due depends on how much earnings fall into different bands. FORTAX calculates contributions for adult `i` in the family using the following formula:

$$\begin{aligned}
 \text{Class 1} &= t_1 \times \mathbb{1}(E_P \geq b_1) \times b_1 \\
 &+ t_2 \times \max(\min(E_P - b_1, b_2 - b_1), 0) \\
 &+ t_3 \times \max(E_P - b_2, 0)
 \end{aligned}$$

where E_P is pre-tax earnings of individual `i` (`fam%ad(i)%earn`), t_j is the tax rate applied to earnings in band j (`sys%natins%rates(j)`) and b_j is the band j limit (`sys%natins%bands(j)`). Class 1 contributions for adult `i` are stored as `net%ad(i)%natinsc1` in FORTAX. Note that `sys%natins%rates(1)` acts as a cliff edge ('entry fee') if earnings exceed `sys%natins%bands(1)`. There have been two major changes to Class 1 contributions since 1990:

- In April 1999, the entry fee was abolished (i.e. t_1 set to zero)
- In April 2003, the cap was lifted on contributions, so NI is now charged above b_2 , known as the 'upper earnings limit' (i.e. t_3 became positive).

Class 1 contributions are lower for employees who have opted out of part of the state pension provision ('contracted out'), but FORTAX assumes everyone is contracted in.

2.3 Self-employed individuals

The self-employed are liable for two different classes of NICs: Class 2 and Class 4. Class 2 contributions are flat rate and are due from all self-employed individuals except those who apply for an exemption because their profits fall below the small earnings exemption (FORTAX assumes those eligible for the exemption apply for it).

Class 4 contributions have a similar structure to Class 1 contributions, except there is no entry fee and rates are lower. They are calculated by FORTAX according to:

$$\begin{aligned}\text{Class 4} &= t_1 \times \min(\max(E_P, 0), b_1) \\ &+ t_2 \times \max(\min(E_P - b_1, b_2 - b_1), 0) \\ &+ t_3 \times \max(E_P - b_2, 0)\end{aligned}$$

where E_P is gross profits of individual i (`fam%ad(i)%earn`), t_j is the tax rate applied to profits in band j (`sys%natins%c4rates(j)`) and b_j is the band j limit (`sys%natins%c4bands(j)`). Class 4 contributions for adult i are stored as `net%ad(i)%natinsc4`. In practice, t_1 has always been zero.²

3 Income tax

3.1 Overview

Income tax is a tax on income from a number of different sources (primarily employment earnings, self-employment profits, interest, dividends and some benefits). FORTAX only deals employment earnings and self-employment profits. Income tax operates through a system of tax-free allowances and bands that are subject to different rates of tax. Since 6 April 1990—when independent taxation was introduced—it has treated individuals in couples separately, although some family-level allowances and reliefs existed after this date. As a result, FORTAX's income tax routines are a mixture of individual- and family-level routines.

There are three steps to calculating income tax liability:

1. Calculate taxable income
2. Work out provisional income tax liability

²You may be wondering what Class 3 contributions are. These contributions are voluntary and are usually made by UK citizens living abroad so as to maintain their contribution record for when they return.

3. Adjust provisional liability for additional reliefs.

FORTAX does this using the following four procedures:

<code>tearn</code>	calculates taxable income for all adults in the family
<code>inctax</code>	calculates provisional income tax liability for individual <code>i</code>
<code>taxaftermca</code>	adjusts income tax of all adults in the family for post-April 1994 married couples allowance
<code>taxafterctc</code>	adjusts income tax of all adults in the family for children's tax credit (April 2001 to April 2003 only)

Income tax parameters are defined in `sys%inctax` and are listed in Appendix A Table 5. Final income tax liability is stored in `net%ad(:)%inctax`. Income tax parameters are updated annually at the start of each tax year.³

3.2 Taxable income (`tearn`)

The subroutine `tearn` calculates the taxable income of each all adults in the family. For the most recent years (since April 2003), this simply involves deducting each individual's personal allowance from their pre-tax individual earnings (FORTAX ignores age-related allowances because they do not affect working-age individuals).

For earlier years, however, additional rebates and allowances were available, which were applied after the personal allowance had been deducted. Until April 1994, the married couple's allowance (MCA) and an additional personal allowance (APA) acted to reduce taxable income for married couples and lone parents/unmarried couples with children. (after this date, the MCA and APA reduced income tax liability rather than taxable income—see section 3.4 below). They were worth the same amount as each other. Until April 1993, the MCA was set against the income of the husband (with any unused allowance transferable to the wife). From April 1993, half or all of the MCA could be transferred to the wife (any unused allowance could still be transferred to the other member of the couple). The APA could be divided between spouses as desired. FORTAX makes some minor simplifications, deducting the MCA/APA from the higher earner (not necessarily the husband) and transferring any remainder to the lower earner.

Until April 1996, there was an individual-level rebate for Class 4 NICs (which are levied on self-employed individuals—see section 2.3 above). This rebate reduced taxable income by half of the Class 4 liability (if this rebate exceeded taxable income, then taxable income was set to zero).

³Changes are sometimes made during the tax year, e.g. the increase to the personal allowance announced in May 2008 to head off a rebellion over the abolition of the 10p starting rate. But these changes apply retrospectively for the entire tax year.

3.3 Provisional income tax liability (`inctax`)

The second step in calculating income tax is working out a provisional liability for each individual. In FORTAX, this is done in the subroutine `inctax`, which calculates an individual's liability given his/her taxable income. For years where there are three income tax bands (April 1992–April 2010), FORTAX uses the following formula:

$$\begin{aligned}\text{Provisional income tax} &= t_1 \times \min(\max(Y_T, b_1) \\ &+ t_2 \times \max(Y_T - b_1, b_2 - b_1), 0) \\ &+ t_3 \times \max(Y_T - b_2, 0)\end{aligned}$$

where Y_T is taxable income of individual `i` (`net%ad(i)%taxable`), t_j is the tax rate applied to income in band j (`sys%inctax%rates(j)`) and b_j is the band j limit (`sys%inctax%bands(j)`). Provisional income tax liability is stored as `net%ad(i)%inctax`.

3.4 Adjustments to provisional income tax liability (`taxaftermca`, `taxafterctc`)

The final step is to adjust provisional income tax liabilities for various reliefs. FORTAX considers two such adjustments: the post-April 1994 versions of married couple's allowance (MCA) and additional personal allowance (APA), and children's tax credit.

From April 1994, both MCA and APA were changed so as to reduce tax liability rather than acting as allowances (as they had done previously). In April 2000 both were abolished for people born after 1935. They were worth the same as each other, and the value was confusingly expressed as a percentage of some number (e.g. in 1999/2000, the MCA/APA was £37.88 per week available at a rate of 10 per cent, which really meant £3.79 per week). The MCA was usually set against the tax liability of the husband (with any unused allowance transferable to the wife), although half or all of it could be transferred to the wife. There was no restriction on how the APA could be divided between members of an (unmarried) couple. FORTAX simply subtracts the MCA/APA from the tax liability of the higher earner, with any remainder subtracted from the lower earner. These calculations are done in the subroutine `taxAfterMCA`, which modifies the value of `net%ad(:)%inctax`.

The children's tax credit reduced the tax liability of those with children under 16 by a flat-rate amount (tapered away from higher-rate taxpayers). It only existed for two years, April 2001 to April 2003, and in the second year there was an additional element for families with a child aged zero. The credit was withdrawn at a rate of 1 in 15 (6.67%) once income exceeded the income tax higher rate threshold. In couples where both individuals were higher-rate taxpayers, it was only tapered away from the higher earner.

What remained of the credit was subtracted from provisional tax liability—for the primary earner first, then for the secondary earner if there was anything left over.⁴ The adjustment for children’s tax credit is done by the subroutine `taxafterctc`, which modifies the values of `net%ad(:)%inctax`.

4 Community charge (`polltax`)

The community charge (widely known as the poll tax) existed in Great Britain between April 1990 and March 1993, having been trialled in Scotland since April 1989. It was never introduced in Northern Ireland (where the previous system of domestic rates continued to apply), but FORTAX ignores this. It was levied on individuals aged 18+ and the amount due was a flat rate that depended on the local authority. FORTAX does not model local authority variation, instead using a national average (set out in Table 6).

Full-time students only paid 20 per cent of the charge, something FORTAX also ignores. FORTAX calculates a family’s liability as simply the national average rate multiplied by the number of adults in the family aged 18 or over. Community charge liabilities are calculated by the subroutine `polltax`, with relevant parameters defined in `sys%ccben` and listed in Appendix A Table 6. It sets the value of `net%tu%polltax`. Parameters were updated annually on 1 April.

5 Council tax (`ctax`)

Council tax is a tax on residential dwellings, introduced on in April 1993 as a replacement for the hugely-unpopular community charge. The amount due for a given house depends on which of eight bands, A–H, its value on 1 April 1991 falls into. Local authorities determine the overall level of the tax, while the ratio between different council tax bands is set by central government (and has not changed). FORTAX does not model the local authority variation, instead using a national average derived from the CIPFA council tax survey (CIPFA, 2008). This is set out in Tables 7 and 8. Only individuals aged 18 or over can be liable for council tax, and a 25 per cent reduction exists for households that contain only one such individual. FORTAX does not model the exemption available for students, and discounts for some disabled individuals and for second homes or unoccupied properties.

FORTAX calculates taxes and transfers for *families*. Since council tax is a tax on *households* (which may contain several families), FORTAX scales the council tax bill down proportionately if there are other individuals in the household who are not part of the family. Council tax is the only part of

⁴In couples where neither individual was a higher-rate taxpayer, half or all the credit could be transferred to the lower earner, something FORTAX ignores.

FORTAX that explicitly allows for individuals living in the household who are not part of the family in question.

Council tax liabilities are calculated in the subroutine `ctax`, with the relevant parameters defined in `sys%ctax` and listed in Appendix A Tables 7 and 7. It sets the value of `net%tu%ctax`. Council tax is uprated annually on 1 April.

6 Child benefit (`chBen`)

Child Benefit is a universal (non-means-tested) benefit available for families with children. A child is someone aged under 16, or aged 16-18 (16-19 from 10 April 2006) and in full-time education. FORTAX assumes that all children listed in `fam` meet the age/education criterion. The amount of child benefit received by the family is equal to the basic rate multiplied by the number of children in the family, plus a (single) additional amount for the first child (see Table 9 for amounts). Child benefit is usually uprated on the first Monday of the new tax year. Until April 1997, there was a separate one parent benefit for lone parents with children, which FORTAX treats as being part of the child benefit award. After this date, it was replaced by a lone parent rate of child benefit, which itself was abolished from July 1998 (except for existing claimants and some protected individuals, which FORTAX ignores). Child benefit is calculated by the subroutine `chBen` using parameters defined in `sys%chben` and listed in Appendix A Table 9. The result is stored in `net%tu%chben`. Child benefit is not taxable.

7 Family credit and working families' tax credit

7.1 Overview

Family credit (FC) and its successor, working families tax credit (WFTC), were means-tested benefits for working families with children. To be eligible, families had to have at least one adult working 16 or more hours a week and have at least one dependent child.

FC was introduced in April 1988, and was replaced by WFTC from October 1999. WFTC was itself replaced in April 2003 as part of the working tax credit and child tax credit reform (see below). WFTC was considerably more generous than FC, for three main reasons:

- Maximum awards were higher
- The means-testing threshold threshold was higher
- Awards were tapered away more slowly

As a result, the WFTC reform increased awards for existing claimants and extended entitlement to new (richer) families. Although WFTC was considerably more generous than FC, the two programmes were structurally very similar (the main difference was the treatment of childcare). As a result FORTAX treats WFTC and FC as being the same benefit. From now on, references to FC should be taken to relate to both FC and WFTC unless explicitly stated otherwise. FORTAX calculates FC awards using:

$$\text{FC} = \max(\text{F} - t \times \max(0, \text{Y}_N - \text{A}), 0)$$

F is maximum FC (before the means test has been applied), t is the taper rate (`sys%fc%taper`), Y_N is net income and A is the applicable amount (the means-test threshold, `sys%fc%thres`). For both FC and WFTC, the maximum award, F, depended on family composition and circumstances. Awards began being tapered away once net income exceeded A, and the minimum award was 50p per week. Usually award calculations were done every six months with awards remaining fixed in between times regardless of changes in circumstances. This is something FORTAX does not model (because it works on a weekly basis). FORTAX calculates the FC award using the following three routines:

`MaxFCamt` calculates maximum FC (F)
`FCDisreg` calculates childcare earnings disregard (part of Y_N)
`FamCred` calls `maxFCamt` and `FCDisreg`, calculates Y_N and imposes means test to arrive at FC

FC parameters are defined in `sys%fc` and are listed in Appendix A Table 10; `famCred` stores the FC award in `net%tu%fc` and the implicit value of the childcare subsidy in `net%tu%chcaresub`. FC was uprated on the first Tuesday of each new tax year and was not taxable.

7.2 Maximum family credit (`maxFCamt`)

Maximum (pre-taper) FC (F in the the formula above) is made up of an adult credit, credits for each child and, from July 1995, a bonus if at least one adult works 30 hours or more a week (FORTAX ignores disability-related credits). The WFTC reform introduced a credit for childcare expenditure on children up to the September following their 15th birthday. It covered 70% of formal childcare expenditure up to a limit.

7.3 Disregards (`FCdisreg` and `sys%fc%maintDisreg`)

Two disregards existed under FC: one for formal childcare expenditure that was set against family earnings and one for maintenance. The disregard for childcare is calculated by the function `FCdisreg`. It was introduced in

October 1994 and was replaced in the WFTC reform by a childcare credit. In order to be eligible, all adults in the family had to be working at least 16 hours a week. Initially, the disregard was worth £40 per week and childcare expenditure had to be in respect of children aged under 11. In April 1996, the disregard was increased to £60. From June 1998, for families with two or more children, it was increased to £100. At the same time, the age limit was increased to the September following the child's 12th birthday (FORTAX requires the child is under 12). The maintenance disregard is simply the parameter `sys%fc%maintDisreg`. It was introduced in April 1992 and was worth £15. It remained at that level until the WFTC reform (October 1999) after which all *child* maintenance was disregarded (other types of maintenance still got a £15 disregard). FORTAX assumes all maintenance is child maintenance, so maintenance is disregarded in full from October 1999.

7.4 Net income and means test (famCred)

Net income (Y_N) and the means test are both calculated in the subroutine `famCred`. Net income for the FC means test is:

$$Y_N = \max(E_N - D_{CC}, 0) + \max(M - D_M, 0)$$

where Y_N is post-tax earnings (`net%tu%posttaxearn`), D_{CC} is the childcare disregard (calculated by `FCdisreg`), M is maintenance (`fam%maint`) and D_M is the maintenance disregard (`sys%fc%maintDisreg`).

The threshold above which FC begins being tapered away, A , is known as the applicable amount. Unlike the applicable amount in HB/CCB/CTB, it is a single constant amount that does not depend on family composition. If net income exceeds the applicable amount, the award is reduced by 70% (55% from October 1999) of the amount by which this is the case. The minimum award is 50p per week.

8 Working tax credit and child tax credit

8.1 Overview

Working tax credit (WTC) provides means-tested support for low-income working families with and without children. To be eligible, an hours-of-work condition must be satisfied: in families with children, at least one adult must work 16 hours or more a week; in families without children, at least one adult must work 30 or more hours a week and be aged 25 or over.⁵ WTC also includes a subsidy for formal childcare, available so long as all adults in the

⁵In families without children, the same adult must meet the age condition and the hours condition.

family work 16 hours or more a week. Child tax credit (CTC) is the main source of means-tested support for families with children. No employment conditions have to be met. WTC and CTC are subject to a joint means test operating at the family level. WTC and CTC were introduced in April 2003, replacing working families' tax credit (WFTC) as well as some other support available through the transfer system (e.g. child additions in IS). The WTC/CTC reform increased generosity for existing claimants as well as extending entitlement further up the income distribution and to families without children. FORTAX ignores disability-related payments, and also the working tax credit supplement for the over 50s who are returning to work.

FORTAX calculates WTC and CTC awards using:

$$\begin{aligned} \text{WTC} &= \max(F_W - t_1 \times \max(E_P - A_W, 0), 0) \\ \text{CTC} &= \max(F_{C1} - t_1 \times \max(E_P - A_{C1}, 0), 0) \\ &+ \max(F_{C2} - t_2 \times \max(E_P - A_{C2}, 0), 0) \end{aligned}$$

where F_W is maximum WTC, F_{C1} is maximum child element of CTC, F_{C2} is maximum family element of CTC, E_P is pre-tax family earnings (`net%tu%pretaxearn`), A_j are the various means-testing thresholds (related to `thr1lo`, `thr1hi` and `thr2` in `sys%ntc`), and t_j are the taper rates (`taper1` and `taper2` in `sys%ntc`). Final WTC and CTC awards are stored in `net%tu%wtc` and `net%tu%ctc` respectively. The means test is a joint test because the point at which CTC starts being tapered away (A_{C1}) depends on the WTC award.

FORTAX calculates the WTC and CTC awards using the following four procedures:

<code>maxWTCamt</code>	calculates maximum WTC (F_W)
<code>maxCTCKid</code>	calculates maximum child element of CTC (F_{C1})
<code>maxCTCFam</code>	calculates maximum family element of CTC (F_{C2})
<code>NTCTaper</code>	imposes joint means test for WTC and CTC
<code>NTC</code>	calls <code>maxWTCamt</code> , <code>maxCTCKid</code> , <code>maxCTCFam</code> and <code>NTCTaper</code> to calculate final WTC and CTC awards

The WTC/CTC system is defined in `sys%ntc`, `sys%wtc`, and `sys%ctc`. Parameters are listed in Appendix A Table 11. It sets the values of `net%tu%wtc`, `net%tu%ctc`, and `net%tu%chcaresub`. WTC and CTC are uprated at the start of each tax year and are not taxable.

8.2 Maximum WTC and CTC (`maxWTCamt`, `maxCTCKid` and `maxCTCFam`)

Here, we describe maximum WTC and CTC awards. Since per-child elements of CTC (F_{C1}) are tapered away at lower pre-tax earnings than per-family elements (F_{C2}), it is necessary to calculate these two parts of maximum CTC separately.

Maximum WTC (F_W) comprises four main elements: a basic element, an element for lone parents and couples, a 30-hour element and a childcare element. Everyone gets the basic element. Lone parents and couples get an additional couple/lone parent element.⁶ The 30-hour element is received if adults in the family work, in total, 30 or more hours a week. This requirement is automatically satisfied for childless families eligible for WTC since eligibility for such families requires at least one adult (by themselves) to work 30 or more hours a week. The childcare element covers a fraction of formal childcare costs up to a limit. The limit is higher for families with two or more children than those with only one child. To be eligible, all adults in the family must work at least 16 hours a week. FORTAX ignores disability elements and return-to-work payments for those aged 50 or more.

Maximum per-child CTC (F_{C1}) is simply equal to the child element multiplied by the number of children. FORTAX ignores the disability elements that could also form part of the per-child component.

Maximum per-family CTC (F_{C2}) is equal to the family element, plus the baby element if the family has a child aged zero.

8.3 Income and the means test (NTCtaper)

Income relevant for the means test is just equal to gross family earnings, `net%tu%pretaxearn` (FORTAX ignores income from savings and pensions, and contributory JSA, which should also count). There are no earnings disregards. Note that, unlike FC, the means-test depends on pre-tax (rather than post-tax) earnings, but this change has less of an impact than might be imagined because of an offsetting change to taper rates. WTC/CTC awards should be calculated on an annual basis, but FORTAX works in weekly terms instead.

The main complication in the means-test is calculating the thresholds above which tapers apply. The threshold for WTC (A_W) is the constant `sys%ntc%thr1lo`. The threshold for the per-child part of CTC depends on whether the family also gets WTC: if so, the threshold is the point at which WTC is exhausted; otherwise, it is `sys%ntc%thr1hi`. WTC and per-child CTC are both tapered away at 39% (37% before April 2008). The threshold for the per-family part of CTC has remained fixed since its introduction at the maximum of `sys%ntc%thr2` and the point at which the per-child part of CTC is exhausted. (For the latter to be relevant, WTC and CTC awards need to be very large—probably because of a substantial WTC childcare element). The per-child part of CTC is tapered away at a rate of 1 in 15 (6.67%). The minimum award is 50p per week.

⁶In Appendix A Table 11, the values for the couple/lone parent element include the basic element.

Table 2: IS definition of full-time employment^a

Start date	Weekly hours
10/04/88 ^b	24
07/04/92 ^c	16
07/10/96 ^d	16 (claimant)
	24 (partner)

^a Stored as `sys%incsup%hours`.

^b SI 1987 No 1967.

^c SI 1991 No 1559.

^d SI 1996 No 1944.

9 Income support and income-based jobseeker's allowance

9.1 Overview

Income support (IS) is a means-tested benefit that tops family income up to a specified level based on family needs. It cannot be claimed by those in full time work. Until October 1996, it could be claimed by almost any family, though many had to meet additional job-seeking conditions.⁷ In October 1996, IS for this latter group was renamed income-based jobseeker's allowance (JSA). Since FORTAX does not model job-seeking conditions, IS and income-based JSA are essentially the same benefit. From now on, we will refer only to IS, but be aware that this includes income-based JSA.

For a family to be eligible, it must include at least one adult aged 18 or over, or a child. And no adult in the family can be working full time. There is also a capital limit and individuals cannot claim while in full-time education, but FORTAX ignores these. The definition of full-time employment has changed over time, as set out in Table 2. Following TAXBEN, FORTAX ignores the most recent of these, assuming that the definition of full-time employment for both the claimant and the partner remained 16 hours even after October 1996). This has the handy consequence of making it impossible to get IS at the same time as FC/WFTC/WTC.

IS awards are calculated using the following formula

$$IS = \max(0, A - Y)$$

where A is the applicable amount (family needs) and Y is net family income

⁷IS could not be claimed at the same time as unemployment benefit. Unemployed individuals who met the contribution conditions for unemployment benefit were usually(?) better off claiming that rather than IS. FORTAX does not model unemployment benefit or contributory JSA (as it was renamed).

less the earnings disregard. FORTAX calculates the IS award using the following three procedures:

- ISAppAmt** calculates applicable amount (A)
- ISDisreg** calculates earnings disregard (part of Y)
- IncSup** calls **ISAppAmt** and **ISDisreg**, calculates Y and imposes means test to arrive at IS award

IS parameters are defined in `sys%incsup` and are also given in Appendix A Table 12; the final IS award is stored in `net%tu%incsup`. IS is uprated on the first Monday of the new tax year. It is not taxable.

9.2 Applicable amount (ISAppAmt)

The applicable amount (A) describes family needs. It is calculated by the function `ISAppAmt` as:

$$\begin{aligned} A &= \text{personal allowance} \\ &+ \text{lone parent/family premium} \\ &+ \text{child additions} \end{aligned}$$

The applicable amount can also include premiums for disability and help with housing costs (principally mortgage interest payments) and but FORTAX does not model these.

Personal allowance Each family gets one of these. Its value depends on the number of adults in the family, their age (under 18, 18-24 or 25 or over, though the amounts are the same for some groups), and whether it is a lone parent family. If one or both adults are under 18, there are a complicated set of rules to determine which personal allowance applies; FORTAX assumes the most common rate.

Lone parent/family premium The lone parent premium was payable to lone parents. It was abolished in April 1998 (existing claimants could get it after this date but FORTAX ignores this possibility). The family premium was available to families with children (payable on top of the lone parent premium for lone parent families). It was transferred to CTC from April 2003.

Child additions One child addition was paid in respect of each child, with the amount dependent on the age of the child. These were also transferred to CTC from April 2003.⁸

⁸In fact, the family premium and child additions were transferred to CTC only for new claimants: existing claimants can still get the family premium and child additions through IS. But since the amount of support is the same whether it comes through IS or CTC, FORTAX just assumes it all comes through CTC.

Before April 2003, the applicable amount was almost identical to that in HB/CCB/CTB (see section 12.2). From April 2003 (when the family premium and child additions were transferred to CTC), the applicable amount in FORTAX is simply the personal allowance.

9.3 Disregards (ISDisreg, sys%incsup%maintdisreg)

There are two disregards to consider: an earnings disregard and a maintenance disregard. Their values are given in Table 13. The earnings disregard has not changed over time, though from October 1996 couples could split the disregard between them as they liked (rather than having to take half each). TAXBEN assumes this change did not happen. This behaviour can be mimicked in FORTAX by setting `sys%incsup%disregShared = .false..`

The disregard for child maintenance (sometimes referred to as the child maintenance premium) was introduced in March 2003. From April 2010, child maintenance is disregarded in full. Other kinds of maintenance count in full. FORTAX assumes that all maintenance is child maintenance. Before March 2003, there was a child maintenance bonus of up to £1,000 for people whose IS entitlement ended because they returned to work or increased hours or earnings. FORTAX ignores this.

9.4 Net income (IncSup)

Before April 2003, net income relevant for the IS means test is equal to:⁹

$$Y = \max(E_N - D_E, 0) + CB + FC + \max(M - D_M, 0)$$

where E_N is net family earnings (`net%tu%posttaxearn`), D_E is the earnings disregard (calculated by `ISDisreg`), CB is child benefit (`net%tu%chben`), FC is family credit/working families' tax credit (`net%tu%fc`), M is child maintenance (`fam%maint`) and D_M is the child maintenance disregard (`sys%incsup%MaintDisreg`). From April 2003, net income for the IS means test is:¹⁰

$$Y = \max(E_N - D_E, 0) + WTC + \max(M - D_M, 0)$$

where WTC is working tax credit (`net%tu%wtc`).

⁹This isn't exactly correct: prior to October 1996, couples had to set half the earnings disregard against net *individual* earnings, rather being able set the whole disregard against net *family* earnings (something FORTAX does implement). Note also that the child maintenance disregard was only introduced in March 2003, so it is relevant here only for the last month.

¹⁰The description in the CPAG (2003) of the 2003/04 system is much more complicated because it was a transitional year when both CTC and IS with child additions could be claimed simultaneously. As described above, FORTAX simplifies by assuming all child support comes through CTC from April 2003.

10 Maternity grant (`matGrant`)

Sure start maternity grant (known as the ‘maternity expenses payment’ before 11 June 2000), is a one-off payment for each new baby a family has. As Table 14 in Appendix A shows, its value has increased substantially over time. FORTAX assumes the payment is for the first year of the baby’s life, so allocates $\frac{1}{52}$ of the one-off value. Families receive the maternity grant if they get IS, FC/WFTC (up to April 2003), or more than the family element of Child Tax Credit (from April 2003) (ignoring disability). Until April 2002, awards were tapered away one-for-one with any savings the family had above £500, but FORTAX ignores this. Maternity grant awards are calculated by the subroutine `matGrant`, with relevant parameters defined in `sys%ccben` and the award stored in `net%tu%matgrant`.

11 Free school meals (`fsm`)

School-age children in families getting IS or (from April 2003) full CTC and no WTC receive free school meals. This is the only in-kind benefit that FORTAX models: others (e.g. free prescriptions and eye tests) are ignored. The value of any free school meals received is calculated by the subroutine `fsm` as 5 times the daily value `sys%incsup%ValFSM` (see Table 12 in Appendix A) multiplied the number of children in the family aged 5 or more. The subroutine sets the value of `net%tu%fsm`.

12 Housing benefit, council tax benefit and community charge benefit

12.1 Overview and algorithm

Housing benefit (HB), council tax benefit (CTB) and community charge benefit (CCB) are means-tested benefits that help low-income families meet various outgoings.

HB was introduced in 1982 and helps cover housing rental payments for families who rent their home.¹¹ The maximum amount of HB a family can receive is their ‘eligible rent.’ This is equal to actual rent less ineligible charges (such as certain water, fuel and service charges) and capped at a ‘local reference rent’, which is the rent of suitably sized accommodation in the same locality.¹² Families on IS automatically get full HB. Other

¹¹Mortgage interest payments for families who own their home may be met through IS, but this isn’t modelled by FORTAX.

¹²Deductions are also made for non-dependants living in the house, but FORTAX does not model these.

families are subject to a means test, much like that for IS. There are no age restrictions on the receipt of HB.

CCB helped families meet their community charge (poll tax) liability (see Section 4 for information about the community charge). It lasted as long as the community charge did: April 1990 to April 1993. It never existed in Northern Ireland (because neither did the community charge), but FORTAX currently ignores this, implementing it for the whole of the UK. CCB was claimed by families (despite the community charge being levied on individuals), but was divided between members of a couple according to the amount each was due to pay (in practice, it was usually divided equally). The most a family could receive was 80 per cent of their community charge liability. As with HB, families on IS automatically got full CCB, while other families were subject to a means test. Since only those aged 18 or over were liable for the community charge, CCB could not be claimed if all individuals in the family were less than 18.

CTB replaced CCB from April 1993, helping families meet their council tax liability (see Section 5 for information about the community charge). FORTAX currently implements CTB for the whole of the UK, ignoring the fact that it has never been possible to claim CTB in Northern Ireland (because council tax has never existed there). Council tax is levied on addresses, whereas CTB is claimed by families. If a given property is occupied by a single family, maximum CTB for that family is equal to the council tax bill. If the property is occupied by more than one family, maximum CTB for a given family is equal to that family's share of the council tax bill. Families on IS automatically get full CTB. Other families are subject to a means test almost identical to that for HB. No one aged under 18 can get CTB because under-18s are not liable for council tax. An alternative benefit, called the second adult rebate, is sometimes received instead of main CTB. It is ignored by FORTAX because far fewer people receive it.

All three benefits involve capital rules, deductions for non-dependants, special conditions for students and pensioners, and transitional protection rules. All of these are ignored by FORTAX.

Except for IS recipients (who are passported to the maximum award), FORTAX calculates HB, CTB and CCB as follows:

$$B = \max(F - t \times \max(0, Y - A), 0)$$

where B is the final HB/CCB/CTB award, F the maximum award (equal to eligible rent/maximum CCB/maximum CTB); t is the taper rate; Y net family is income (less the relevant disregards); and A is the applicable amount.

Since HB, CCB and CTB are calculated in much the same way, FORTAX does calculations that are common to all three benefits in an initial subroutine called `prelimCalc`. The following routines are used:

HBAppAmt	calculates the applicable amount
StdDisreg	calculates standard earnings disregard
FTDisreg	calculates disregard for full-time workers
ChCareDisreg	calculates childcare disregard
MaintDisreg	calculates maintenance disregard
prelimCalc	does common preliminary calculations for HB/CTB/CCB, calling HBAppAmt, StdDisreg, FTDisreg, ChCareDisreg and MaintDisreg
HBen	calculates housing benefit for the family by calculating net income and imposing the means test (uses the results of prelimCalc)
polltaxBen	calculates community charge benefit for family by calculating net income and imposing the means test (uses the results of polltax and prelimCalc)
ctaxBen	calculates council tax benefit for family by calculating net income and imposing the means test (uses the results of ctax and prelimCalc)

HB/CCB/CTB parameters are defined in `sys%rebatesys` and are also set out in table 15 in Appendix A). Final awards are stored as `net%tu%hben`, `net%tu%polltaxben` and `net%tu%ctaxben`. None are taxable. CCB/CTB is uprated on 1 April each year. HB is uprated on 1 April each year, except for those whose rent is paid weekly, for whom it is uprated from the first Monday in April each year.

12.2 Applicable amount

The applicable amount (A) describes family needs. It is very similar to that for IS. It is calculated:

$$\begin{aligned}
 A &= \text{personal allowance} \\
 &+ \text{lone parent/family premium} \\
 &+ \text{child additions}
 \end{aligned}$$

The applicable amount can also include disability premiums and but FORTAX does not model this.

Personal allowance The value of the personal allowance depends on the number of adults in the family, their age (for childless single claimants, whether anyone is 25 or over; otherwise whether anyone is 18 or over) and whether it is a lone parent family.¹³

Lone parent/family premium The family premium is payable if the family includes a child. It was not transferred to CTC in April 2003 (unlike the corresponding premium in IS). From April 2003 an additional

¹³Note, unlike with IS, there are no additional complications when one or both adults are under 18.

premium has existed for families with a child aged zero. FORTAX implements this higher rate as a child addition (in line with TAXBEN), so there is an error if the family has more than one child under 1. Until being abolished in April 1998, the lone parent premium was payable on top of the family premium. (Existing claimants could get it after April 1998 but FORTAX ignores this possibility).

Child additions One child addition is due for each child the family has. Before April 2003, their value depended on the age of child; after this date, there was a single amount (but see earlier discussion of family premium). Note that child additions were not transferred to CTC in April 2003.

12.3 Disregards (`stdDisreg`, `FTDisreg`, `chCareDisreg`, `maintDisreg`)

FORTAX considers four disregards for HB/CCB/CTB: the standard earnings disregard, a disregard for full-time workers, a disregard for childcare costs and a maintenance disregard. The value of these disregards are given in Table 16 in Appendix A.

The standard disregard is calculated by the function `stdDisreg`. All families are entitled to the standard disregard, which is set against family earnings (not income). There are three different values: £5 for childless singles, £25 for lone parents and £10 for couples. These values have not changed over time, except that prior to October 1990 the disregard for lone parents was £15.

The disregard for full-time workers is calculated by the function `FTDisreg`. It has existed since the FC 30-hour credit was introduced from in July 1995. Its original purpose was to prevent the 30-hour credit from being lost through reduced HB/CTB awards (FC counts as income for the purpose of the taper calculation, see below), but both its value and entitlement has been extended since then (see tables 3 and 16).

The childcare disregard is calculated by the function `chCareDisreg`, and allows a limited amount of formal childcare costs to be offset against earnings. It was introduced in October 1994 and its value has gradually increased since. From June 1998 a higher disregard was introduced for families with more than one child. For a family to be entitled, all adults in the family must be working at least 16 hours. Additionally, the family must include a child aged under a specified limit.¹⁴ Until July 2000, the disregard was set against family earnings. Since that date it has effectively been set against the sum of family earnings and any tax credit award (WFTC until April 2003, WTC and CTC thereafter).¹⁵

¹⁴From 1 April 1997, a child is not counted as having reached a given age until the September after the relevant birthday (see SI 1996 No 2545). FORTAX ignores this.

¹⁵SI 2000 No 1471.

Table 3: Characteristics of HB/CTB disregard for full-time workers

Entitlement	Up to October 1999:	families getting FC and whose award includes the full-time premium
	October 1999 to April 2004:	families eligible for WFTC/WTC full-time premium
Form	From April 2004:	families eligible for WTC set against FC income
	Up to October 1999 ^a : From October 1999 ^b :	effectively set against the sum of family earnings and WFTC/WTC income
Value	Up to April 2005:	FC/WFTC/WTC 30-hour premium
	From April 2005:	more than WTC 30-hour premium

^a Regulations 2 and 9 of SI 1995 No 1339.

^b Regulations 5 and 6 of SI 1999 No 920.

The maintenance disregard is calculated by the function `maintDisreg`. Maintenance is financial support paid after the breakdown of a relationship. Usually it is paid in respect of children, but this need not be the case. April 1992 saw the introduction of a £15 disregard for maintenance (of any type) received by families with children. From April 2010, *child* maintenance can be disregarded completely.¹⁶ Other types of maintenance received by families with children still get a £15 disregard. Families without children do not get to disregard any maintenance. FORTAX assumes all maintenance is for children. As for maintenance paid to someone else, as best as I can establish, it has never been routinely possible to deduct this from income.¹⁷

12.4 Maximum HB, CCB and CTB

Maximum HB, CCB and CTB are calculated in `HBen`, `polltaxBen` and `ctaxBen` respectively.

Maximum HB is equal to eligible rent, which is actual rent less ineligible charges (e.g. fuel costs and utility bills), and capped if the rent is deemed too expensive. FORTAX assumes there are no ineligible charges in rent (`fam%rent`). As for rent caps, FORTAX doesn't calculate them itself, it just imposes one contained in `fam%rentcap`. If `sys%rebatesys%docap = .false`.

¹⁶ Claimants over 60 seem to have been able to disregard all child maintenance before 2008.

¹⁷ See CIS/683/1993 for example.

then eligible rent is assumed to equal actual rent. Otherwise, a rent cap is imposed for private renters (identified by `fam%tenure`), so that eligible rent is equal to the minimum of `fam%rent` and `fam%rentcap`.

Maximum CCB was 80% of the family's community charge liability.

Maximum council tax benefit was capped at the level of a band E home between 1 April 1998 and 31 March 2004. Either side of this date, there was no such cap.¹⁸

12.5 Net income

The definition of net family income is the same in HB as in CCB and CTB. Prior to the WFTC reform in October 1999 it was:

$$Y = \max(E_N - D_E - D_{CC}, 0) + \max(FC - D_{FT}, 0) \\ + \max(M - D_M, 0) + CTC + CB$$

where E_N is net family earnings (`net%tu%posttaxearn`), D_E is the earnings disregard (calculated by `StdDisreg`), D_{CC} is the childcare disregard (calculated by `ChCareDisreg`), FC is family credit/working families' tax credit (`net%tu%fc`), D_{FT} is the disregard for full-time workers (calculated by `FTDisreg`), M is child maintenance (`fam%maint`), D_M is the child maintenance disregard (calculated by `maintDisreg`), and CB is child benefit (`net%tu%chben`). From October 1999, the disregard for full-time workers could effectively be set against the sum of net family earnings and the tax credit award, giving:

$$Y = \max(\max(E_N - D_E - D_{CC}, 0) + FC - D_{FT}, 0) \\ + \max(M - D_M, 0) + CTC + CB$$

And from July 2000, the childcare disregard could be set against any tax credit award as well as earnings, giving:¹⁹

$$Y = \max(\max(\max(E_N - D_E, 0) + FC + WTC - D_{FT}, 0) \\ + CTC - D_{CC}, 0) \\ + \max(M - D_M, 0) + CB$$

where WTC is working tax credit (`net%tu%wtc`).

12.6 Means test

In all three cases, the benefit award is reduced by a fraction of the amount by which income exceeds the applicable amount (t , the 'taper rate'). The

¹⁸See SI 1997 No 1841 and SI 2004 No 154.

¹⁹Obviously, FC is positive only prior to April 2003 and WTC is positive only from April 2003.

taper rate is 65% for HB, 20% for CTB and 15% for CCB. No HB or CCB is payable if the resulting amount is less than 50p a week. There is no minimum award for CTB.

A Tax system parameters

The tables in this Appendix list the main parameters of the UK tax system that have changed over time. Most tables were originally generated from FORTAX system files, but other sources have been used to check the figures and to provide precise reform dates. Most important are the annual *Social security benefit up-rating order* legislation (see list of legislation) and the Child Poverty Action Group Welfare benefit and tax credit handbooks. Other sources are noted in the tables.

Table 4: National Insurance parameters^a

Start date	Class 1				Class 2			Class 4				
	Entry rate (t_1)	PT ^b (£pw) (b_1)	Main rate (t_2)	UEL ^c (£pw) (b_2)	Upper rate (t_3)	SEE ^d (£pw)	Rate (£pw)	Entry rate (t_1)	LPL ^e (£pw) (b_1)	Main rate (t_2)	UPL ^f (£pw) (b_2)	Upper rate (t_3)
06/04/90	0.02	46.00	0.09	350.00	0.00	50.00	4.55	0.00	104.81	0.06	350.00	0.00
06/04/91	0.02	52.00	0.09	390.00	0.00	55.76	5.15	0.00	113.46	0.06	390.00	0.00
06/04/92	0.02	54.00	0.09	405.00	0.00	58.27	5.35	0.00	117.69	0.06	405.00	0.00
06/04/93	0.02	56.00	0.09	420.00	0.00	60.38	5.55	0.00	121.93	0.06	420.00	0.00
06/04/94	0.02	57.00	0.10	430.00	0.00	61.54	5.65	0.00	124.81	0.07	430.00	0.00
06/04/95	0.02	58.00	0.10	440.00	0.00	62.69	5.75	0.00	127.69	0.07	440.00	0.00
06/04/96	0.02	61.00	0.10	455.00	0.00	65.96	6.05	0.00	131.92	0.06	455.00	0.00
06/04/97	0.02	62.00	0.10	465.00	0.00	66.90	6.05	0.00	134.80	0.06	465.00	0.00
06/04/98	0.02	64.00	0.10	485.00	0.00	69.00	6.25	0.00	140.60	0.06	485.00	0.00
06/04/99	0.00	66.00	0.10	500.00	0.00	72.50	6.55	0.00	145.00	0.06	500.00	0.00
06/04/00	0.00	76.00	0.10	535.00	0.00	73.50	2.00	0.00	84.00	0.07	535.00	0.00
06/04/01	0.00	87.00	0.10	575.00	0.00	76.10	2.00	0.00	87.21	0.07	575.00	0.00
06/04/02	0.00	89.00	0.10	585.00	0.00	77.40	2.00	0.00	88.75	0.07	585.00	0.00
06/04/03	0.00	89.00	0.11	595.00	0.01	78.75	2.00	0.00	88.75	0.08	595.00	0.01
06/04/04	0.00	91.00	0.11	610.00	0.01	81.05	2.05	0.00	91.25	0.08	610.00	0.01
06/04/05	0.00	94.00	0.11	630.00	0.01	83.86	2.10	0.00	94.13	0.08	630.00	0.01
06/04/06	0.00	97.00	0.11	645.00	0.01	85.87	2.10	0.00	96.83	0.08	645.00	0.01
06/04/07	0.00	100.00	0.11	670.00	0.01	89.13	2.20	0.00	100.48	0.08	670.00	0.01
06/04/08	0.00	105.00	0.11	770.00	0.01	92.79	2.30	0.00	104.52	0.08	770.00	0.01
06/04/09	0.00	110.00	0.11	844.00	0.01	97.60	2.40	0.00	109.90	0.08	843.75	0.01
06/04/10	0.00	110.00	0.11	844.00	0.01	97.60	2.40	0.00	109.90	0.08	843.75	0.01

^a All National Insurance parameters are components of `sys/natins`. Class 1 parameters are stored as `numrates`, `bands(:)` and `rates(:)`. Class 2 parameters are `c2floor` and `c2rate`. Class 4 parameters are `c4nrates`, `c4bands(:)` and `c4rates(:)`.

^b Primary threshold. This is the point at which employee National Insurance contributions currently start being paid. Previously this point was known as the lower earnings limit.

^c Upper earnings limit.

^d Small earnings exemption.

^e Lower profits limit.

^f Upper profits limit.

Table 5: Income tax parameters^a

Start date	Personal Allowance (£pw)	MCA/APA ^b		Children's tax credit			Class 4		Starting rate		Basic rate		Higher rate		Top Rate
		Amount (£pw)	Rate	Basic (£pw)	Baby (£pw)	Taper	Rebate	Rate	Limit (£pw)	Rate	Limit (£pw)	Rate	Limit (£pw)	Rate	
								(t ₁)	(b ₁)	(t ₂)	(b ₂)	(t ₃)	(b ₃)	(t ₄)	
06/04/90	57.79	33.08	-	-	-	-	0.50	0.00	0.00	0.25	398.08	0.40	-	-	
06/04/91	63.37	33.08	-	-	-	-	0.50	0.00	0.00	0.25	455.77	0.40	-	-	
06/04/92	66.25	33.08	-	-	-	-	0.50	0.20	38.46	0.25	455.77	0.40	-	-	
06/04/93	66.25	33.08	-	-	-	-	0.50	0.20	48.08	0.25	455.77	0.40	-	-	
06/04/94	66.25	33.08	0.20	-	-	-	0.50	0.20	57.69	0.25	455.77	0.40	-	-	
06/04/95	67.79	33.08	0.15	-	-	-	0.50	0.20	61.54	0.25	467.31	0.40	-	-	
06/04/96	72.40	34.42	0.15	-	-	-	-	0.20	75.00	0.24	490.38	0.40	-	-	
06/04/97	77.79	35.19	0.15	-	-	-	-	0.20	78.85	0.23	501.92	0.40	-	-	
06/04/98	80.67	36.54	0.15	-	-	-	-	0.20	82.69	0.23	521.15	0.40	-	-	
06/04/99	83.37	37.88	0.10	-	-	-	-	0.10	28.85	0.23	538.46	0.40	-	-	
06/04/00	84.33	0.00	-	-	-	-	-	0.10	29.23	0.22	546.15	0.40	-	-	
06/04/01	87.21	0.00	-	10.00	0.00	0.07	-	0.10	36.15	0.22	565.38	0.40	-	-	
06/04/02	88.75	0.00	-	10.17	10.17	0.07	-	0.10	36.92	0.22	575.00	0.40	-	-	
06/04/03	88.75	0.00	-	-	-	-	-	0.10	37.69	0.22	586.54	0.40	-	-	
06/04/04	91.25	0.00	-	-	-	-	-	0.10	38.85	0.22	603.85	0.40	-	-	
06/04/05	94.13	0.00	-	-	-	-	-	0.10	40.19	0.22	623.08	0.40	-	-	
06/04/06	96.83	0.00	-	-	-	-	-	0.10	41.35	0.22	640.38	0.40	-	-	
06/04/07	100.48	0.00	-	-	-	-	-	0.10	42.88	0.22	665.38	0.40	-	-	
06/04/08	116.06	0.00	-	-	-	-	-	0.20	44.62	0.20	669.23	0.40	-	-	
06/04/09	124.52	0.00	-	-	-	-	-	0.20	46.92	0.20	719.23	0.40	-	-	
06/04/10	124.52	0.00	-	-	-	-	-	0.20	46.92	0.20	719.23	0.40	2884.62	0.50	

^a Income tax parameters are stored in `sys/inctax`. Allowances are named as follows: the personal allowance is `pa`, MCA/APA (married couple's allowance/additional personal allowance) amount and rate are `mma` and `mmrate`, the CTC (children's tax credit) amount and baby amount are `ctc` and `ctcyng`, and the NI Class 4 rebate is `c4rebate`. Rates and bands are stored as `numrates`, `bands` and `rates`. Note there is not a strict correspondence between the rate/band number in the table and the rate/band number in FORTAX.

^b Note that the MCA/APA operated as an allowance until April 1994, when it was changed so that it reduced provisional income tax liability.

Table 6: Community charge parameters^a

Start date	Rate (£pw)
01/04/90	6.63
01/04/91	4.69
01/04/92	5.32
01/04/93	-

^a Community charge parameters are stored in `sys%ccben`. The national average rate is `ccrate`. Supplementary source: Family Expenditure Survey data.

Table 7: Council tax band D rate^a

Start date	Rate
01/04/93	10.80
01/04/94	11.15
01/04/95	11.50
01/04/96	12.24
01/04/97	13.04
01/04/98	14.16
01/04/99	15.14
01/04/00	16.09
01/04/01	17.13
01/04/02	18.53
01/04/03	20.90
01/04/04	22.13
01/04/05	23.01
01/04/06	24.03
01/04/07	25.05
01/04/08	26.03
01/04/09	26.82
01/04/10	27.30

^a Council tax parameters are stored in `sys%ctax`. The national average band D rate is `bandd`. Supplementary source: CIPFA council tax survey (CIPFA, 2008).

Table 8: Council tax rates relative to band D^a

Band	Ratio
A	0.67
B	0.77
C	0.88
E	1.22
F	1.44
G	1.67
H	2.00

^a Council tax parameters are stored in `sys%ctax`. The ratios are named `ratioa` to `ratioh`. They have remained unchanged since the introduction of council tax.

Table 9: Child benefit parameters^a

Start date	Basic amount (£pw)	Extra for oldest child (£pw)	One parent benefit (£pw)
09/04/90	7.25	0.00	5.60
08/04/91	7.25	1.00	5.60
07/10/91 ^b	7.50	1.75	5.60
06/04/92	7.80	1.85	5.85
12/04/93	8.10	1.90	6.05
11/04/94	8.25	1.95	6.15
10/04/95	8.45	1.95	6.30
08/04/96	8.80	2.00	6.30
07/04/97	9.00	2.05	6.05
06/04/98	9.30	2.15	6.05
06/07/98	9.30	2.15	-
12/04/99	9.60	4.80	-
10/04/00	10.00	5.00	-
09/04/01	10.35	5.15	-
08/04/02	10.55	5.20	-
07/04/03	10.75	5.30	-
12/04/04	11.05	5.45	-
11/04/05	11.40	5.60	-
10/04/06	11.70	5.75	-
09/04/07	12.10	6.00	-
07/04/08	12.55	6.25	-
05/01/09 ^c	13.20	6.80	-
12/04/10	12.40	6.90	-

^a Child benefit parameters are stored in `sys%chben`. The basic amount is `basic`, extra for oldest child is `kid1xtra` and one parent benefit is `opf`. Supplementary source: National Statistics (2003).

^b SI 1991 No 1595.

^c SI 2008 No 3264.

Table 10: Family credit (FC)/Working families' tax credit (WFTC) parameters^a

Start date	Adult		Child credit				Childcare disregard/credit			Applicable amount (£pw)	
	credit (£pw)	30-hour credit (£pw)	0-10 (£pw)	11-15 (£pw)	16-17 (£pw)	18 (£pw)	1 child (£pw)	2+ children (£pw)	Fraction eligible		Max age
10/04/90	36.35	0.00	8.25	14.15	17.80	25.10	-	-	-	-	57.60
09/04/91	38.30	0.00	9.70	16.10	20.05	27.95	-	-	-	-	62.25
07/04/92	41.00	0.00	10.40	17.25	21.45	29.90	-	-	-	-	66.60
13/04/93	42.50	0.00	10.75	17.85	22.20	31.00	-	-	-	-	69.00
12/04/94 ^b	44.30	0.00	11.20	18.55	23.05	32.20	-	-	-	-	71.70
04/10/94	44.30	0.00	11.20	18.55	23.05	32.20	40.00	40.00	-	11	71.70
11/04/95	45.10	0.00	11.40	18.90	23.45	32.80	40.00	40.00	-	11	73.00
18/07/95 ^c	45.10	10.00	11.40	18.90	23.45	32.80	40.00	40.00	-	11	73.00
09/04/96	46.45	10.30	11.75	19.45	24.15	33.80	60.00	60.00	-	11	75.20
08/04/97	47.65	10.55	12.05	19.95	24.80	34.70	60.00	60.00	-	11	77.15
07/04/98	48.80	10.80	12.35	20.45	25.40	35.40	60.00	60.00	-	11	79.00
02/06/98 ^d	48.80	10.80	12.35	20.45	25.40	35.40	60.00	100.00	-	12	79.00
10/11/98 ^e	48.80	10.80	14.85	20.45	25.40	35.40	60.00	100.00	-	12	79.00
13/04/99	49.80	11.05	15.15	20.90	25.95	35.95	60.00	100.00	-	12	80.65
05/10/99 ^f	52.30	11.05	19.85	20.90	25.95	35.95	100.00	150.00	0.70	15	90.00
11/04/00	53.15	11.25	21.25	21.25	26.35	36.35	100.00	150.00	0.70	15	91.45
06/06/00 ^g	53.15	11.25	25.60	25.60	26.35	36.35	100.00	150.00	0.70	15	91.45
10/04/01	54.00	11.45	26.00	26.00	26.75	36.75	100.00	150.00	0.70	15	92.90
05/06/01 ^h	59.00	11.45	26.00	26.00	26.75	36.75	135.00	200.00	0.70	15	92.90
09/04/02	60.00	11.65	26.45	26.45	27.20	37.20	135.00	200.00	0.70	15	94.50
04/06/02 ⁱ	62.50	11.65	26.45	26.45	27.20	37.20	135.00	200.00	0.70	15	94.50

^a FC/WFTC parameters are stored in `sys%fc`. The Adult credit is `adult` and the 30-hour credit is `ftprem`. Child additions are given by `numagerng`, `kidage1(:)`, `kidageu(:)` and `kidcred(:)`. The FC childcare disregard parameters are `maxagecc`, `maxcc1` and `maxcc2`, while the WFTC childcare credit parameters are `wftcmaxagecc`, `wftcmaxcc1`, `wftcmaxcc2` and `wftcpropcc`. The inequality for the childcare maximum age parameter is strict. The applicable amount is `thres`. Supplementary source: p35, DSS (1999).

^b SI 1994 No 1924.

^c SI 1995 No 1339.

^d SI 1997 No 2793.

^e SI 1998 No 1541.

^f SI 1999 No 2487.

^g SI 2000 No 1324.

^h SI 2001 No 1351.

ⁱ SI 2002 No 1333.

Table 11: Working tax credit (WTC) and child tax credit (CTC) parameters^a

Start date	Working tax credit				Child tax credit				Thresholds				
	Basic Element (£pw)	Couple/LP element ^a (£pw)	30-hour element (£pw)	Childcare element	1 kid (£pw)	2+ kids (£pw)	Fraction Eligible	Max age	Family element (£pw)	Baby element (£pw)	Child element (£pw)	With WTC (£pw)	No WTC (£pw)
06/04/03	29.33	58.17	11.92	200.00	0.70	15	10.48	10.48	10.48	27.79	97.31	254.42	961.54
06/04/04	30.19	59.90	12.31	200.00	0.70	15	10.48	10.48	10.48	31.25	97.31	259.23	961.54
06/04/05	31.15	61.83	12.69	175.00	0.70	15	10.48	10.48	10.48	32.50	100.38	267.50	961.54
06/04/06	32.02	63.56	13.08	175.00	0.80	15	10.48	10.48	10.48	33.94	100.38	272.21	961.54
06/04/07	33.27	65.96	13.56	175.00	0.80	15	10.48	10.48	10.48	35.48	100.38	278.75	961.54
06/04/08	34.62	68.65	14.13	175.00	0.80	15	10.48	10.48	10.48	40.10	123.46	299.52	961.54
06/04/09	36.35	72.12	14.90	175.00	0.80	15	10.48	10.48	10.48	42.98	123.46	308.46	961.54
06/04/10	36.92	73.27	15.19	175.00	0.80	15	10.48	10.48	10.48	44.23	123.46	311.35	961.54

^a WTC parameters are stored in `sys%wtc`. The basic element is `basic`, the couple/one parent element is `coulp` and the 30-hour element is `ft`. The components of the childcare element are `maxcc1`, `maxcc2`, `propcc` and `maxagecc`. CTC parameters are stored in `sys%ctc`. The family, baby and child elements are `fam`, `baby` and `kid`. Parameters common to WTC and CTC are stored in `sys%ntc`. The three thresholds are `thr1lo`, `thr1hi` and `thr2`.

^a Includes basic element.

Table 12: Income support (IS) parameters^a

Start date	Personal allowance						Premiums			Child additions				Free school meal (£/day)
	Couple		Lone parent		Single		Family parent (£pw)	Lone parent (£pw)	Age of child					
	< 18 (£pw)	18+ (£pw)	< 18 (£pw)	18+ (£pw)	< 25 ^b (£pw)	25+ (£pw)			0-10 (£pw)	11-15 (£pw)	16-17 (£pw)	18 (£pw)		
09/04/90	43.80	57.60	21.90	36.70	28.80	36.70	7.35	4.10	12.35	18.25	21.90	28.80	3.30	
08/04/91	47.30	62.25	23.65	39.65	31.15	39.65	7.95	4.45	13.35	19.75	23.65	31.15	3.60	
07/10/91 ^c	47.30	62.25	23.90	39.65	31.40	39.65	8.70	4.45	13.60	20.00	23.90	31.40	3.60	
06/04/92	50.60	66.60	25.55	42.45	33.60	42.45	9.30	4.75	14.55	21.40	25.55	33.60	3.60	
12/04/93	52.40	69.00	26.45	44.00	34.80	44.00	9.65	4.90	15.05	22.15	26.45	34.80	3.75	
11/04/94	54.55	71.70	27.50	45.70	36.15	45.70	10.05	5.10	15.65	23.00	27.50	36.15	3.75	
10/04/95	55.55	73.00	28.00	46.50	36.80	46.50	10.25	5.20	15.95	23.40	28.00	36.80	3.85	
08/04/96	57.20	75.20	28.85	47.90	37.90	47.90	10.55	5.20	16.45	24.10	28.85	37.90	4.00	
07/04/97	58.70	77.15	29.60	49.15	38.90	49.15	10.80	4.95	16.90	24.75	29.60	38.90	4.10	
06/04/98	60.10	79.00	30.30	50.35	39.85	50.35	11.05	-	17.30	25.35	30.30	30.30	4.25	
09/11/98 ^d	60.10	79.00	30.30	50.35	39.85	50.35	11.05	-	19.80	25.35	30.30	30.30	4.25	
12/04/99	61.35	80.65	30.95	51.40	40.70	51.40	13.90	-	20.20	25.90	30.95	30.95	4.40	
04/10/99 ^e	61.35	80.65	30.95	51.40	40.70	51.40	13.90	-	24.90	25.90	30.95	30.95	4.40	
10/04/00	62.35	81.95	31.45	52.20	41.35	52.20	14.25	-	26.60	26.60	31.75	31.75	4.04	
23/10/00 ^f	62.35	81.95	31.45	52.20	41.35	52.20	14.25	-	30.95	30.95	31.75	31.75	4.04	
09/04/01	63.35	83.25	31.95	53.05	42.00	53.05	14.50	-	31.45	31.45	32.25	32.25	4.19	
22/10/01 ^g	63.35	83.25	31.95	53.05	42.00	53.05	14.50	-	32.95	32.95	33.75	33.75	4.19	
08/04/02	64.45	84.65	32.50	53.95	42.70	53.95	14.75	-	33.50	33.50	34.30	34.30	4.27	
14/10/02 ^h	64.45	84.65	32.50	53.95	42.70	53.95	14.75	-	37.00	37.00	37.80	37.80	4.27	
07/04/03	65.30	85.75	32.90	54.65	43.25	54.65	-	-	-	-	-	-	4.28	
12/04/04	66.50	87.30	33.50	55.65	44.05	55.65	-	-	-	-	-	-	4.34	
11/04/05	67.15	88.15	33.85	56.20	44.50	56.20	-	-	-	-	-	-	4.37	
10/04/06	68.65	90.10	34.60	57.45	45.50	57.45	-	-	-	-	-	-	4.38	
09/04/07	70.70	92.80	35.65	59.15	46.85	59.15	-	-	-	-	-	-	4.40	
07/04/08	72.35	94.95	47.95	60.50	47.95	60.50	-	-	-	-	-	-	4.43	
06/04/09	76.90	100.95	50.95	64.30	50.95	64.30	-	-	-	-	-	-	5.38	
12/04/10	78.30	102.75	51.85	65.45	51.85	65.45	-	-	-	-	-	-	5.38	

^a IS parameters are stored in `sys%incsup`. Allowances are `maincou` and `youngcou` for the main and young couple allowances, `mainlp` and `younglp` for the main and young lone parent allowances, and `mainin` and `youngin` for the main and young single allowances. The family and lone parent premiums are `premfam` and `premlp`. For child additions, the number of bands is recorded by `numagerng`. The lower and upper ages for each band are given by `agerng1(:)` and `agerng2(:)` and the value of the child addition for each band is in `addkid(:)`. The free school meal value is `valFSM`. Supplementary source: DWP Tax benefit model tables (e.g. DWP, 2009) for the free school meal value.

^b Many under-18s get a lower rate, but this is not modelled by FORTAX.

^c SI 1991 No 1559.

^d SI 1998 No 1541.

^e SI 1999 No 2555.

^f SI 2000 No 1993.

^g SI 2001 No 2980.

^h SI 2002 No 2019.

Table 13: Income support (IS) disregard parameters^a

Start date	Earnings disregard			Child maintenance disregard (£pw)
	Lone parent (£pw)	Childless single (£pw)	Couple (£pw)	
10/04/88	20.00	5.00	5.00 each	0.00
07/10/96	20.00	5.00	10.00 in total ^b	0.00
03/03/03	20.00	5.00	10.00 in total	10.00 ^c
27/10/08	20.00	5.00	10.00 in total	20.00 ^d
12/04/10	20.00	5.00	10.00 in total	Full ^e

^a IS disregards are stored in `sys%incsup`. The three values of the earnings disregard are given by `disreglp`, `disregsin` and `disregcou`. The variable `disregshared` describes whether the couple disregard is transferable between members of a couple. The child maintenance disregard is `maintdisreg`.

^b SI 1996 No 1944.

^c SI 2000 No 3176 and SI 2003 No 346.

^d SI 2008 No 2111.

^e SI 2009 No 2655.

Table 14: Maternity grant value^a

Start date	Value (£)
06/04/87	100.00
27/03/00	200.00
03/12/00	300.00
16/06/02	500.00

^a The maternity grant is a one-off payment. It is stored as `sys%chben%MatGrantVal`.
Supplementary source: paragraph 3.56, p79 of HM Treasury (2009).

Table 15: Housing Benefit (HB), community charge benefit (CCB) and council tax benefit (CTB) parameters^a

Start date	Couple			Lone parent			Single			Premiums			Child additions		
	< 18 (£pw)	18+ (£pw)	< 18 (£pw)	< 18 (£pw)	18+ (£pw)	< 25 (£pw)	25+ (£pw)	Family (£pw)	Lone parent (£pw)	Child < 1 (£pw)	0-10 (£pw)	11-15 (£pw)	16-17 (£pw)	18 (£pw)	
01/04/90	43.80	57.60	21.90	36.70	28.80	36.70	7.35	9.70	-	-	12.35	18.25	21.90	28.80	
01/04/91	47.30	62.25	31.15	39.65	31.15	39.65	8.70	10.05	-	-	13.35	19.75	23.65	31.15	
07/10/91 ^b	47.30	62.25	31.15	39.65	31.15	39.65	8.70	10.05	-	-	13.60	20.00	23.90	31.40	
01/04/92	50.60	66.60	33.60	42.45	33.60	42.45	8.30	10.60	-	-	14.55	21.40	25.55	33.60	
01/04/93	52.40	69.00	34.80	44.00	34.80	44.00	9.65	10.95	-	-	15.05	22.15	26.45	34.80	
01/04/94	54.55	71.70	36.15	45.70	36.15	45.70	10.05	11.25	-	-	15.65	23.00	27.50	36.15	
01/04/95	55.55	73.00	36.80	46.50	36.80	46.50	10.25	11.50	-	-	15.95	23.40	28.00	36.80	
01/04/96	57.20	75.20	37.90	47.90	37.90	47.90	10.55	11.50	-	-	16.45	24.10	28.85	37.90	
01/04/97	58.70	77.15	38.90	49.15	38.90	49.15	10.80	11.25	-	-	16.90	24.75	29.60	38.90	
01/04/98	60.10	79.00	39.85	50.35	39.85	50.35	11.05	11.00	-	-	17.30	25.35	30.30	39.85	
09/11/98 ^c	60.10	79.00	39.85	50.35	39.85	50.35	11.05	11.00	-	-	19.80	25.35	30.30	39.85	
01/04/99	61.35	80.65	40.70	51.40	40.70	51.40	13.90	-	-	-	20.20	25.90	30.95	40.70	
04/10/99 ^d	61.35	80.65	40.70	51.40	40.70	51.40	13.90	-	-	-	24.90	25.90	30.95	40.70	
01/04/00	62.35	81.95	41.35	52.20	41.35	52.20	14.25	-	-	-	26.60	26.60	31.75	41.35	
23/10/00 ^e	62.35	81.95	41.35	52.20	41.35	52.20	14.25	-	-	-	30.95	30.95	31.75	41.35	
01/04/01	63.35	83.25	42.00	53.05	42.00	53.05	14.50	-	-	-	31.45	31.45	32.25	42.00	
22/10/01 ^f	63.35	83.25	42.00	53.05	42.00	53.05	14.50	-	-	-	32.95	32.95	33.75	42.00	
01/04/02	64.45	84.65	42.70	53.95	42.70	53.95	14.75	-	-	-	33.50	33.50	34.30	42.70	
14/10/02 ^g	64.45	84.65	42.70	53.95	42.70	53.95	14.75	-	-	-	37.00	37.00	37.80	42.70	
01/04/03	65.30	85.75	43.25	54.65	43.25	54.65	15.75	-	-	10.45	38.50	38.50	38.50	43.25	
01/04/04	66.50	87.30	44.05	55.65	44.05	55.65	15.95	-	-	10.50	42.27	42.27	42.27	44.05	
01/04/05	67.15	88.15	44.50	56.20	44.50	56.20	16.10	-	-	10.50	43.88	43.88	43.88	44.50	
01/04/06	68.65	90.10	45.50	57.45	45.50	57.45	16.25	-	-	10.50	45.58	45.58	45.58	45.50	
01/04/07	70.70	92.80	46.85	59.15	46.85	59.15	16.43	-	-	10.50	47.45	47.45	47.45	46.85	
01/04/08	72.35	94.95	47.95	60.50	47.95	60.50	16.75	-	-	10.50	52.59	52.59	52.59	47.95	
01/04/09	76.90	100.95	50.95	64.30	50.95	64.30	17.30	-	-	10.50	56.11	56.11	56.11	50.95	
01/04/10	78.30	102.75	51.85	65.45	51.85	65.45	17.40	-	-	10.50	57.57	57.57	57.57	51.85	

^a Parameters common to housing benefit and community charge benefit/council tax benefit are stored in `sys%rebatesys`. The main and young couple allowances are `maincou` and `yngcou`, the main and young lone parent allowances are `mainlp` and `ynglp`, and the main and young single allowances are `mainsin` and `yngsin`. The family and lone parent premiums are `premfam` and `premlp`. The premium for families with a child under 1 is stored as a child addition in `FORTAX`. For child additions, the number of bands is recorded by `numagerng`. The lower and upper ages for each band are given by `agerngl(:)` and `agerngu(:)` and the value of the child addition for each band is in `addkid(:)`. The 1 April dates apply for all CTB cases and to HB cases where rent is paid monthly. If rent is weekly, then the relevant date is the first Monday in April.

^b SI 1991 No 1599.
^c SI 1998 No 1541.
^d SI 1999 No 2555.
^e SI 2000 No 1993.
^f SI 2001 No 2980.
^g SI 2002 No 2019.

Table 16: Housing Benefit (HB), community charge benefit (CCB) and council tax benefit (CTB) disregard parameters^a

Start date	Standard disregard			Full-time		Childcare disregard			Child maintenance disregard
	Lone parent (£pw)	Childless single (£pw)	Couple (£pw)	disregard (£pw)	disregard (£pw)	Max: 1 child (£pw)	Max: 2+ children (£pw)	Max age	
01/04/90	15.00	5.00	10.00	0.00	0.00	0.00	0.00	-	0.00
01/10/90	25.00 ^b	5.00	10.00	0.00	0.00	0.00	0.00	-	0.00
01/04/92	25.00	5.00	10.00	0.00	0.00	0.00	0.00	-	15.00 ^c
03/10/94	25.00	5.00	10.00	0.00	0.00	40.00 ^d	0.00	11	15.00
17/07/95	25.00	5.00	10.00	10.00 ^e	10.30	40.00	0.00	11	15.00
01/04/96	25.00	5.00	10.00	10.00	10.55	60.00	0.00	11	15.00
01/04/97	25.00	5.00	10.00	10.00	10.80	60.00	0.00	11	15.00
01/04/98	25.00	5.00	10.00	10.00	10.80	60.00	0.00	11	15.00
01/06/98	25.00	5.00	10.00	10.00	11.05	60.00	100.00 ^f	12 ^f	15.00
01/04/99	25.00	5.00	10.00	10.00	11.05	60.00	100.00	12	15.00
04/10/99	25.00	5.00	10.00	10.00	11.05	70.00 ^g	105.00 ^g	15 ^g	15.00
01/04/00	25.00	5.00	10.00	10.00	11.25	70.00	105.00	15	15.00
01/04/01	25.00	5.00	10.00	10.00	11.45	70.00	105.00	15	15.00
13/08/01	25.00	5.00	10.00	10.00	11.45	94.50 ^h	140.00 ^h	15	15.00
01/04/02	25.00	5.00	10.00	10.00	11.65	94.50	140.00	15	15.00
01/04/03	25.00	5.00	10.00	10.00	11.92	94.50	140.00	15	15.00
01/04/04	25.00	5.00	10.00	10.00	12.32	135.00	200.00	15	15.00
01/04/05	25.00	5.00	10.00	10.00	14.50	175.00	300.00	15	15.00
01/04/06	25.00	5.00	10.00	10.00	14.90	175.00	300.00	15	15.00
01/04/07	25.00	5.00	10.00	10.00	15.45	175.00	300.00	15	15.00
01/04/08	25.00	5.00	10.00	10.00	16.05	175.00	300.00	15	15.00
27/10/08	25.00	5.00	10.00	10.00	16.05	175.00	300.00	15	Full ⁱ
01/04/09	25.00	5.00	10.00	10.00	16.85	175.00	300.00	15	Full
01/04/10	25.00	5.00	10.00	10.00	17.10	175.00	300.00	15	Full

^a Parameters common to housing benefit and community charge benefit/council tax benefit are stored in `sys%rebatesys`. The standard disregard is `disregsin, disregrcou and disregrlp`. The full-time disregard is a combination of parameters: `sys%fc%ftprem` until April 2003, `sys%wtc%ft` between April 2003 and April 2004 and `sys%wtc%newdisreg` from April 2004 onwards. The childcare disregard parameters are `maxcc1, maxcc2` and `maxagecc`. The maintenance disregard is `maintdisreg`.

^b SI 1990 No 1773 and SI 1990 No 1775.

^c SI 1991 No 2695.

^d SI 1994 No 1924.

^e SI 1995 No 1339.

^f SI 1997 No 2793.

^g SI 1999 No 920.

^h SI 2001 No 1864.

ⁱ SI 2008 No 1042.

References

- Adam, S. and Browne, J. (2009), 'A survey of the UK tax system,' IFS Briefing Note No. 9.
- CIPFA (2008), 'Council tax survey: 2008/09,' (www.cipfastats.net/uploads/MainTables282200824916.pdf).
- CPAG (2003), 'Welfare benefits and tax credits handbook: 2003/2004,' London: Child Poverty Action Group.
- CPAG (2010), 'Welfare benefits and tax credits handbook: 2010/2011,' London: Child Poverty Action Group.
- DSS (1999), 'Social Security Statistics: 1999,' London: Government Statistical Service.
- DWP (2009), 'Tax Benefit Model Tables: April 2009,' (http://research.dwp.gov.uk/asd/asd1/tbm/TBMT_2009.pdf).
- HM Treasury (2009), 'Tax benefit reference manual: 2009-2010 edition,' (www.parliament.uk/deposits/depositedpapers/2009/DEP2009-1987.pdf).
- Levell, P., May, R., O'Dea, C. and Phillips, D. (2009), 'A survey of the UK benefit system,' IFS Briefing Note No. 13.
- National Statistics (2003), 'Child Benefit,' (http://research.dwp.gov.uk/asd/asd1/child_benefit/ChildBenefit.pdf).

Regulations

CIS/683/1993	Social Security Appeal Tribunal, Commissioner's File CIS/683/1993 (www.rightsnet.org.uk/pdfs/cmmr_upload/cis/cis68393.doc)
SI 1987 No 1967	The Income Support (General) Regulations 1987 (www.opsi.gov.uk/si/si1987/Uksi_19871967_en_1.htm)
SI 1990 No 320	The Social Security Benefits Up-rating Order 1990 (www.opsi.gov.uk/si/si1990/Uksi_19900320_en_1.htm)
SI 1990 No 1773	The Community Charge Benefits (General) Amendment (No. 3) Regulations 1990 (www.opsi.gov.uk/SI/si1990/Uksi_19901773_en_1.htm)
SI 1990 No 1775	The Housing Benefit (General) Amendment (No. 2) Regulations 1990 (www.opsi.gov.uk/SI/si1990/Uksi_19901775_en_1.htm)
SI 1991 No 503	The Social Security Benefits Up-rating Order 1991 (www.opsi.gov.uk/si/si1991/uksi_19910503_en_1.htm)
SI 1991 No 1595	The Child Benefit and Social Security (Fixing and Adjustment of Rates) Amendment No. 2 Regulations 1991 (www.opsi.gov.uk/si/si1991/Uksi_19911595_en_1.htm)
SI 1991 No 1559	The Income Support (General) Amendment No. 4 Regulations 1991 (www.opsi.gov.uk/si/si1991/Uksi_19911559_en_1.htm)
SI 1991 No 1599	The Housing Benefit and Community Charge Benefits (Miscellaneous) Amendment Regulations 1991 (www.opsi.gov.uk/si/si1991/Uksi_19911599_en_1.htm)
SI 1991 No 2695	The Income-related Benefits Schemes (Miscellaneous Provisions) Amendment Regulations 1991 (www.opsi.gov.uk/si/si1991/Uksi_19912695_en_1.htm)
SI 1992 No 2910	The Social Security Benefits Up-rating Order 1992 (www.opsi.gov.uk/si/si1991/Uksi_19912910_en_1.htm)
SI 1993 No 349	The Social Security Benefits Up-rating Order 1993 (www.opsi.gov.uk/si/si1993/Uksi_19930349_en_1.htm)
SI 1994 No 542	The Social Security Benefits Up-rating Order 1994 (www.opsi.gov.uk/SI/si1994/Uksi_19940542_en_1.htm)
SI 1994 No 1924	The Income-related Benefits Schemes (Miscellaneous Amendments) (No.4) Regulations 1994 (www.opsi.gov.uk/si/si1994/Uksi_19941924_en_1.htm)

SI 1995 No 559	The Social Security Benefits Up-rating Order 1995 (www.opsi.gov.uk/si/si1995/Uksi_19950559_en_1.htm)
SI 1995 No 1339	The Income-related Benefits Schemes (Miscellaneous Amendments) (No. 2) Regulations 1995 (www.opsi.gov.uk/si/si1995/Uksi_19951339_en_1.htm)
SI 1996 No 599	The Social Security Benefits Up-rating Order 1996 (www.opsi.gov.uk/SI/si1996/Uksi_19960599_en_1.htm)
SI 1996 No 1944	The Income-related Benefits Schemes and Social Fund (Miscellaneous Amendments) Regulations 1996 (www.opsi.gov.uk/si/si1996/Uksi_19961944_en_1.htm)
SI 1996 No 2545	The Income-related Benefits and Jobseeker's Allowance (Personal Allowances for Children and Young Persons) (Amendment) Regulations 1996 (www.opsi.gov.uk/si/si1996/Uksi_19962545_en_1.htm)
SI 1997 No 543	The Social Security Benefits Up-rating Order 1997 (www.opsi.gov.uk/si/si1997/19970543.htm)
SI 1997 No 1841	The Council Tax Benefit (General) Amendment Regulations 1997 (www.opsi.gov.uk/si/si1997/19971841.htm)
SI 1997 No 2793	The Income-related Benefits (Miscellaneous Amendments) Regulations 1997 (www.opsi.gov.uk/SI/si1997/19972793.htm)
SI 1998 No 470	The Social Security Benefits Up-rating Order 1998 (www.opsi.gov.uk/si/si1998/19980470.htm)
SI 1998 No 1541	The Social Security Amendment (Personal Allowances for Children) Regulations 1998 (www.opsi.gov.uk/si/si1998/19981541.htm)
SI 1999 No 264	The Social Security Benefits Up-rating Order 1999 (www.opsi.gov.uk/si/si1999/19990264.htm)
SI 1999 No 920	The Housing Benefit and Council Tax Benefit (General) Amendment Regulations 1999 (www.opsi.gov.uk/si/si1999/19990920.htm)
SI 1999 No 2487	The Tax Credits Schemes (Miscellaneous Amendments) Regulations 1999 (www.opsi.gov.uk/SI/si1999/19992487.htm)
SI 1999 No 2555	The Social Security Amendment (Personal Allowances for Children and Young Persons) Regulations 1999 (www.opsi.gov.uk/si/si1999/19992555.htm)

SI 2000 No 440	The Social Security Benefits Up-rating Order 1999 (www.opsi.gov.uk/si/si2000/20000440.htm)
SI 2000 No 1324	The Tax Credits Schemes (Miscellaneous Amendments No. 2) Regulations 2000 (www.opsi.gov.uk/si/si2000/20001324.htm)
SI 2000 No 1471	The Housing Benefit and Council Tax Benefit (General) Amendment (No. 2) Regulations 2000 (www.opsi.gov.uk/SI/si2000/20001471.htm)
SI 2000 No 1993	The Social Security Amendment (Personal Allowances for Children) Regulations 2000 (www.opsi.gov.uk/si/si2000/20001993.htm)
SI 2000 No 3176	The Social Security (Child Maintenance Premium and Miscellaneous Amendments) Regulations 2000 (www.opsi.gov.uk/si/si2000/20003176.htm)
SI 2001 No 1141	The Social Security Benefits Up-rating Order 2001 (www.opsi.gov.uk/si/si2001/20011141.htm)
SI 2001 No 1351	The Tax Credits (Miscellaneous Amendments No. 5) Regulations 2001 (www.opsi.gov.uk/si/si2001/20011351.htm)
SI 2001 No 1864	The Housing Benefit and Council Tax Benefit (General) Amendment Regulations 2001 (www.opsi.gov.uk/si/si2001/20011864.htm)
SI 2001 No 2980	The Social Security Amendment (Personal Allowances for Children and Young Persons) Regulations 2001 (www.opsi.gov.uk/si/si2001/20012980.htm)
SI 2002 No 829	The Social Security Benefits Up-rating Order 2002 (www.opsi.gov.uk/si/si2002/20020829.htm)
SI 2002 No 1333	The Tax Credits (Miscellaneous Amendments No. 3) Regulations 2002 (www.opsi.gov.uk/SI/si2002/20021333.htm)
SI 2002 No 2019	The Social Security Amendment (Personal Allowances for Children and Young Persons) Regulations 2002 (www.opsi.gov.uk/SI/si2002/20022019.htm)
SI 2003 No 346	The Child Support, Pensions and Social Security Act 2000 (Commencement No.13) Order 2003 (www.opsi.gov.uk/si/si2003/20030346.htm)
SI 2003 No 526	The Social Security Benefits Up-rating Order 2003 (www.opsi.gov.uk/si/si2003/20030526.htm)
SI 2004 No 154	The Council Tax Benefit (Abolition of Restrictions) Regulations 2004 (www.opsi.gov.uk/si/si2004/20040154.htm)

SI 2004 No 552	The Social Security Benefits Up-rating Order 2004 (www.opsi.gov.uk/si/si2004/20040552.htm)
SI 2005 No 522	The Social Security Benefits Up-rating Order 2005 (www.opsi.gov.uk/si/si2005/20050522.htm)
SI 2006 No 645	The Social Security Benefits Up-rating Order 2006 (www.opsi.gov.uk/si/si2006/20060645.htm)
SI 2007 No 688	The Social Security Benefits Up-rating Order 2007 (www.opsi.gov.uk/si/si2007/uksi_20070688_en.1.htm)
SI 2008 No 632	The Social Security Benefits Up-rating Order 2008 (www.opsi.gov.uk/si/si2008/uksi_20080632_en.1.htm)
SI 2008 No 1042	The Social Security (Miscellaneous Amendments) (No.2) Regulations 2008 (www.opsi.gov.uk/si/si2008/uksi_20081042_en.1.htm)
SI 2008 No 2111	The Social Security (Child Maintenance Amendments) Regulations 2008 (www.opsi.gov.uk/si/si2008/uksi_20082111_en.1.htm)
SI 2008 No 3264	The Child Benefit (Rates) (Amendment) Regulations 2008 (www.opsi.gov.uk/si/si2008/uksi_20083246_en.1.htm)
SI 2009 No 497	The Social Security Benefits Up-rating Order 2009 (www.opsi.gov.uk/si/si2009/uksi_20090497_en.1.htm)
SI 2009 No 2655	The Social Security (Miscellaneous Amendments) (No. 4) Regulations 2009 (www.opsi.gov.uk/si/si2009/uksi_20092655_en.1.htm)
SI 2010 No 793	The Social Security Benefits Up-rating Order 2010 (www.opsi.gov.uk/si/si2010/uksi_20100793_en.1.htm)

Abbreviations

APA	Additional personal allowance
CCB	Community charge ('poll tax') benefit
CIPFA	Chartered Institute of Public Finance and Accountancy
CPAG	Child Poverty Action Group
CTB	Council tax benefit
CTC	Child tax credit
DWP	Department for Work and Pensions
FC	Family credit
HB	Housing benefit
IS	Income support
JSA	Jobseeker's allowance
MCA	Married couple's allowance
NI	National Insurance
NICs	National Insurance contributions
SI	Statutory instrument
VAT	Value added tax
WFTC	Working families' tax credit
WTC	Working tax credit