

How Much Do We Tax the Return to Saving?

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1. Introduction

The questions of *whether* and *how much* the return to saving ought to be taxed are of central importance in discussions of how to design or reform the tax system.¹ This Briefing Note provides a description of how the UK tax system treats the return to saving.² There are two reasons why 24 pages are required for this description: first, there are some conceptual issues that must be dealt with concerning how we will measure the level of tax on returns in different assets (see Section 3); second, the plethora of different assets and taxes that exist means that even a selective discussion of tax rates will fill a number of pages.

The remainder of the note is organised in several sections. Section 2 considers what is known about the amount of wealth held by the UK population in different assets. This discussion is useful for thinking about whether assets in the UK are held in forms that are subject to different tax treatments, or whether wealth is actually concentrated in certain assets,

¹ These issues have, for example, been extensively discussed in commissioned work for the *Mirrlees Review*; see particularly O. Attanasio and M. Wakefield, 'The effects on consumption and saving of taxing asset returns', IFS, London, 2008 (<u>http://www.ifs.org.uk/mirrleesreview/reports/consumption.pdf</u>) and J. Banks and P. Diamond, 'The base for direct taxation', IFS, London, 2008 (<u>http://www.ifs.org.uk/mirrleesreview/reports/base.pdf</u>).

² We deal with the UK tax system that was in place before Pre-Budget Report 2008 (PBR08). This makes the Briefing Note consistent with S. Adam, J. Browne and C. Heady, 'Taxation in the UK', IFS, London, 2008

^{*} This Briefing Note was prepared in order to provide background information useful for the authors and editors of *Reforming the Tax System for the 21st Century: The Mirrlees Review* (<u>http://www.ifs.org.uk/mirrleesreview/index.php</u>; hereafter, the *Mirrlees Review*). It is hoped that the material may be of interest more broadly to individuals who want to know how the UK tax system treats assets. Funding from the ESRC Centre for the Microeconomic Analysis of Public Policy (grant no. RES-544-28-5001) at IFS is gratefully acknowledged. For helpful, if occasionally rather more involved than anticipated, discussions, the author is particularly grateful to Stuart Adam and Richard Blundell; thanks also to Carl Emmerson for providing comments on a draft of the document and to Orazio Attanasio, James Banks, Steve Bond, Malcolm Gammie and Paul Johnson for discussions of the issues addressed. The responsibility for all errors lies with the author alone. Mistakes should be notified to <u>matt_w@ifs.org.uk</u>.

⁽http://www.ifs.org.uk/mirrleesreview/reports/uktax.pdf), which is the *Mirrlees Review* paper dealing with the UK tax system. PBR08 introduced some new higher rates of income tax which will create tax rates on saving that we have not considered, but these changes will come into effect in or after 2010.

perhaps those that are the most lightly taxed. Section 3 outlines the conceptual issues that underpin the construction of measures of the level of tax on the return to saving. Section 4 then describes the measures of the tax on the return to saving for different UK assets. As well as providing these measures for a range of assets, we also consider: how the different tax rates – or benefit withdrawal rates – that individuals can face will affect the return to saving; how the rate of inflation affects the measures of the tax on the return to saving; and how the effective tax on returns has varied over time. Section 5 gathers conclusions.

2. The forms in which wealth is held

There are many different forms in which UK households might hold wealth. Wealth might be divided between physical assets and financial savings.³ The former category consists mainly of residential property, although other forms of property or valuables might be important for some individuals. Financial savings might be held in many different assets: in pensions; in regular bank or building society accounts; in tax-privileged Individual Savings Accounts (ISAs); in stocks and shares held either directly or through a trust or fund; and in any of a plethora of National Savings products, to name but a few of the possibilities.

For interpreting data on how much wealth households hold in these different assets, and how this relates to the tax system, it is useful to have a framework for thinking about how assets are taxed. We can think of three points at which saved funds may be taxed: first, funds may be taxed when income is received (i.e. before or at the point that they are paid into an asset); second, returns (interest, capital gains or dividends) may be taxed as they accrue; and third, funds may be taxed when they are withdrawn from an asset. The tax treatment of different assets may then be described according to whether each stage in the life of the asset is taxed (T) or exempt from tax (E). Thus a regular bank account would be described as having 'TTE' tax treatment, since savings are made from income after tax, interest is also subject to income tax, but withdrawals from the account are not taxed. As we discuss in more detail below, other assets offer different tax treatment. For example, Individual Savings Accounts (ISAs) and their predecessors Personal Equity Plans (PEPs) and Tax-Exempt Special Savings Accounts (TESSAs) are or were taxed on a TEE basis, while the majority of funds held in private pensions follow an EET model.

³ We do not consider the implicit wealth accumulated by investing in labour market skills (human capital) and thereby increasing lifetime earning potential.

| Wealth category | £ billion |
|---|-----------|
| a. Total net worth | 7,523 |
| b. Value of residential buildings | 4,077 |
| c. Total financial liabilities | -1,539 |
| d. Value of loans secured against dwellings | -1,147 |
| e. Total (gross) financial assets | 4,146 |
| f. Wealth held in ISAs | 208 |
| g. Wealth in cash ISAs | 128 |
| h. Wealth held in PEPs | 79 |

Table 1. Aggregate statistics on wealth of the UK household sector, 2007

Notes:

The data in rows a-e of the table are from the United Kingdom National Accounts: The Blue Book 2008 (hereafter, The Blue Book), ONS,

(http://www.statistics.gov.uk/downloads/theme_economy/BB08.pdf), and the household sector is 'households and non-profit institutions serving households' (hh&npish). Specifically, the series are:

a. 'Total net worth', series CGRC from table 10.10 of *The Blue Book*. Note that this total value is *not* equal to the sum of rows b, c and e due to £839 billion of non-financial assets (either tangible or non-tangible) that have been excluded from the table.

b. 'Residential buildings', series CGRI from table 10.10 of The Blue Book.

c. 'Total financial liabilities', series NNPP from table 6.1.9 of *The Blue Book*.

d. The sum (calculated by the author) of series NNRQ, NNRR and NNRS from table

6.1.9 of The Blue Book.

e. 'Total financial assets', series NNML from table 6.1.9 of *The Blue Book*. The data in rows f–h of the table are from the 'Pensions and tax-free savings and investment' section of HMRC Statistics

(<u>http://www.hmrc.gov.uk/stats/pensions/index.htm</u>). Specifically:

f. 'Total Funds' row in table 9.6 (<u>http://www.hmrc.gov.uk/stats/isa/table9-6-onwards.pdf</u>).

g. 'Total' row for the 'Cash Component' in table 9.6

(http://www.hmrc.gov.uk/stats/isa/table9-6-onwards.pdf).

h. From the 'Value of funds' column, 'Total plans' row of table 9.2 (http://www.hmrc.gov.uk/stats/peps/table9-2.pdf).

Table 1 shows aggregate data on how much wealth UK households had in a certain range of assets in 2007, the latest year for which data are available. The table shows that the total net worth of the UK household sector in 2007 was around £7.5 trillion. While housing wealth accounted for quite a large fraction of this, holdings of financial wealth had a value of £4.1 trillion. Only a relatively small fraction of this wealth was held in the tax-privileged (i.e. TEE) accessible assets, ISAs and PEPs. Unfortunately, the data used in Table 1 do not include a separate valuation of wealth held in private pensions. HMRC data from 2003 suggested that the value of wealth held in funded pensions was around £1 trillion,^{4,5} at a time when

⁴ See the 'Funded pensions' row of table 13.4 of HMRC Statistics (<u>http://www.hmrc.gov.uk/stats/personal_wealth/table13_4.pdf</u>).

total net worth (around £7.5 trillion in 2007) was around £5.3 trillion.⁶ Even if we assume that the value of pension wealth increased somewhat between 2003 and 2007, these data still indicate that the UK household sector does hold considerable wealth in financial assets other than the tax-privileged pensions, ISAs and PEPs.

As well as having information about the forms in which UK households in aggregate hold their wealth, it is interesting to understand whether there are particular types of individual or family who are particularly likely to be exposed to heavily taxed assets. Unfortunately, data do not yet exist with which we can calculate the fraction of wealth in assets classified by their broad tax treatment for all households in the UK.⁷ The only evidence we can bring to bear are some calculations made from a recent wave of the English Longitudinal Study of Ageing (ELSA), which produces measures of private pension wealth as well as financial wealth in all other forms for its sample of adults aged 50 and over in England in 2002. Whilst such data do not cover the whole of the age distribution, they do cover the group with the highest levels of financial assets and who have quite a large fraction of total financial assets (and certainly the group that is most important from a transitional point of view).

Data from ELSA were used to construct Table 2. In the wealth measures for this table, we have chosen to look only at financial wealth as this is sufficient to give us an impression of how the types of assets held vary

⁵ From the point of view of individuals, the effective tax treatment of total lifetime resources may depend not only on the amount held in funded pensions, but also on the value of accrued rights in *un*funded occupational schemes; the value of these may be quite substantial, but since it is not backed by a stock of wealth it is not included in the measure of the value of wealth in funded pensions that is quoted in the text. Additionally, the value of accrued rights in state pensions may well be similar in magnitude to the value of wealth in funded pensions (again, see table 13.4 of HMRC Statistics, <u>http://www.hmrc.gov.uk/stats/personal_wealth/table13_4.pdf</u>).

⁶ The £5.3 trillion figure is the measure of 'Wealth on national accounts basis' in table 13.4 of HMRC Statistics

^{(&}lt;u>http://www.hmrc.gov.uk/stats/personal_wealth/table13_4.pdf</u>). The 'Total net worth' (series CGRC) measure for 2003 in *The Blue Book*

⁽http://www.statistics.gov.uk/downloads/theme_economy/Blue_Book_2007_web.pdf) was £5.4 trillion.

⁷ The Wealth and Assets Survey will be a welcome major step forward, and the first release of data is just starting to be used: <u>http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15074</u>.

| Decile of gross | Range of gross | Proportion of wealth held in: | | | |
|------------------|------------------------------|-------------------------------|---------------------------------|-----------------------|--|
| financial wealth | financial wealth (£'000s) | Private pensions (EET) | ISAs, TESSAs & PEPs (TEE) | Other assets (TTE) | |
| Poorest | <1.7 | 0.126 | 0.091 | 0.783 | |
| 2 | 1.7–16.6 | 0.548 | 0.138 | 0.315 | |
| 3 | 16.6–39.1 | 0.652 | 0.110 | 0.238 | |
| 4 | 39.1–75.9 | 0.682 | 0.108 | 0.210 | |
| 5 | 75.9–122.3 | 0.697 | 0.079 | 0.223 | |
| 6 | 122.3–177.2 | 0.747 | 0.068 | 0.185 | |
| 7 | 177.2–245.4 | 0.781 | 0.062 | 0.157 | |
| 8 | 245.4–350.3 | 0.818 | 0.046 | 0.136 | |
| 9 | 350.3–511.2 | 0.790 | 0.057 | 0.153 | |
| Richest | >511.2 | 0.684 | 0.044 | 0.273 | |
| All | | 0.736 | 0.055 | 0.209 | |

Table 2. Fraction of financial wealth held in assets with different tax treatments: tax units with at least one member aged 52–64 in 2004 (England only) Panel a. Fractions in assets with different tax treatments

| Panel b. | Further s | ubdividing | non-p | ension | assets | by risl | c type o | of asset | t held |
|----------|-----------|------------|-------|--------|--------|---------|----------|----------|--------|
| | | | | | | | | | |

| Decile of gross | Proportion of wealth held in: | | | | | | |
|------------------|-------------------------------|------------|-------|-------|--------------|-------|--|
| financial wealth | ISAs | , TESSAs & | PEPs | | Other assets | | |
| | | (TEE) | | | (TTE) | | |
| | Total | Safe | Risky | Total | Safe | Risky | |
| Poorest | 0.091 | 0.091 | 0.000 | 0.783 | 0.749 | 0.034 | |
| 2 | 0.138 | 0.117 | 0.021 | 0.315 | 0.247 | 0.067 | |
| 3 | 0.110 | 0.078 | 0.032 | 0.238 | 0.184 | 0.054 | |
| 4 | 0.108 | 0.079 | 0.029 | 0.210 | 0.154 | 0.056 | |
| 5 | 0.079 | 0.055 | 0.024 | 0.223 | 0.154 | 0.069 | |
| 6 | 0.068 | 0.042 | 0.026 | 0.185 | 0.126 | 0.059 | |
| 7 | 0.062 | 0.035 | 0.026 | 0.157 | 0.100 | 0.057 | |
| 8 | 0.046 | 0.027 | 0.019 | 0.136 | 0.080 | 0.056 | |
| 9 | 0.057 | 0.023 | 0.034 | 0.153 | 0.088 | 0.065 | |
| Richest | 0.044 | 0.016 | 0.028 | 0.273 | 0.117 | 0.156 | |
| All | 0.055 | 0.027 | 0.027 | 0.209 | 0.109 | 0.100 | |

Notes:

1. Private pension wealth comprises current fund value of defined contribution (DC) pensions and the value of accrued entitlements to date of private defined benefit (DB) pensions (based on assumption of no further real earnings growth). For more details on pension wealth calculation methodology, see J. Banks, C. Emmerson and G. Tetlow, 'Estimating pension wealth of ELSA respondents', IFS Working Paper 05/09, 2005 (<u>http://www.ifs.org.uk/wps/wp0509.pdf</u>, doi: 10.1920/wp.ifs.2005.0509).

2. ISAs: Individual Savings Accounts (all types); TESSAs: Tax-Exempt Special Savings Accounts; PEPs: Personal Equity Plans.

3. Proportions are ratios of means for each decile group, not group means of individual ratio.

4. Safe 'ISAs, TESSAs and PEPs' are cash ISAs and all TESSAs; risky 'ISAs, TESSAs and PEPs' are the stocks and shares or life insurance components of ISAs, and all PEPs. Safe 'Other assets' are cash deposit accounts, premium bonds and National Savings products; risky 'Other assets' are stocks and shares held directly, or in trust, or through a share club or employee share ownership scheme.

5. Numbers do not always sum exactly, due to rounding.

Source: Thanks to James Banks for calculations from the 2004 English Longitudinal Study of Ageing micro-data.

across the wealth distribution.⁸ In line with the aggregate statistics of Table 1. panel a of this table indicates that the amount of wealth held in assets taxed on a 'TEE' basis is relatively small. This is relatively less so toward the bottom (though not at the very bottom) of the wealth distribution among families⁹ who have less exposure to private pensions. The fraction held in TTE assets (i.e. assets that are tax-penalised relative to ISAs or pensions) generally falls across the wealth distribution, with the main exception being between the 9th and richest decile groups, presumably because some among the very richest families exhaust the available scope for saving in TEE or EET forms.¹⁰ Panel b of the table further disaggregates asset categories, to consider whether or not nonpension assets are held in forms that bear stock market risk. The most striking facts are that: individuals in the bottom wealth group hold very little wealth in risky assets; and, relative to other groups, individuals in the top wealth group on average hold a substantially higher proportion of their financial wealth in non-tax-privileged assets that carry stock market risk.

In short, the data that we have discussed indicate that families in the UK hold a wide diversity of assets. In Section 4, we will look in more detail at the tax treatment of the returns to saving in these different assets, and see that this can vary considerably.

⁸ For fuller information on all sources of wealth, as measured by ELSA, see J. Banks, C. Emmerson and G. Tetlow, 'Better prepared for retirement? Using panel data to improve wealth estimates of ELSA respondents', IFS Working Paper 07/12, 2007 (<u>http://www.ifs.org.uk/wps/wp1207.pdf</u>, doi: <u>10.1920/wp.ifs.2007.0712</u>) and J. Banks, C. Emmerson, Z. Oldfield and G. Tetlow, *Prepared for Retirement? The Adequacy and Distribution of Retirement Resources in England*, IFS, London, 2005 (<u>http://www.ifs.org.uk/comms/r67.pdf</u>, doi: <u>10.1920/re.ifs.2005.0067</u>).

⁹ A family is a 'benefit unit', i.e. a single adult or adult couple, plus any dependent children.

¹⁰ When interpreting this pattern, it should also be borne in mind that individuals in lower wealth deciles also have low incomes (on average), and so may not be exhausting their income tax personal allowance (or capital gains tax allowances). Such individuals will have less incentive to shift funds out of assets that are notionally TTE, since for them the current tax treatment of the asset will effectively be TEE. On the other hand, if such individuals are forward-looking, they would take account of tax liabilities that would accrue if they were to become income-tax payers in the future.

3. Measures of tax on the return to saving

3.1 Which taxes will we include?¹¹

When measuring the effect of tax on the return to saving, we have to make some decisions about which taxes to include in the calculations. In particular, we might think that when savings are invested in company stocks and shares, taxes on company profits will affect the final return accruing to the investor and so should be included in our calculation. On the other hand, we might prefer to take the view that UK savers can invest at a given (risk-adjusted) rate of return determined on world capital markets and that this is the rate of return received on UK stocks after taxes on corporate profits have been paid. This 'small open economy' assumption does not seem unreasonable for the UK. The assumption justifies the view that the taxes affecting the return to assets received by UK savers are personal taxes – primarily income tax, but also taxes such as capital gains tax. This is the view we take in this paper, where our measures concern personal taxes but not taxes on profits.

The previous paragraph summarises our broad strategy concerning which taxes to include, but certain taxes and asset types cannot be categorised neatly according to this summary:

- Stamp duties on transactions of stocks and shares, and of housing, may be thought of as 'personal taxes'. However, consider stamp duty on shares. This is paid on all share transactions, regardless of who buys or sells the shares. This means that people will be prepared to pay less for UK shares, and so stamp duty on share transactions is reflected in the price of UK shares. While this affects the value of these shares and the amount UK firms can raise by selling shares, it does not affect the return to a saver investing in shares. We will ignore stamp duties in all of our calculations.
- The 'small open economy' assumption underlying our decisions about which taxes to include in our calculations is perhaps least easy to sustain when we consider housing. However, it does not seem entirely implausible to suppose that taxes such as stamp duty land tax and council tax, which apply to all UK housing rather than to UK residents who invest in housing, will primarily affect the price of housing rather than the return on wealth invested in residential property. We will ignore stamp duty land tax and council tax in our calculations.

¹¹ Some of the points of this subsection are discussed in more detail in section 4.3 of S. Adam, J. Browne and C. Heady, 'Taxation in the UK', paper prepared for the *Mirrlees Review*, IFS, London, 2008 (<u>http://www.ifs.org.uk/mirrleesreview/reports/uktax.pdf</u>).

- Provisions for and reforms to 'dividend tax credits' mean it is hard to decide whether these should properly be considered as part of the income tax system that applies only to UK savers, or whether they are more like credits attaching to all dividends paid by UK companies and so not truly personal taxes. Indeed, whether or not these credits should properly be considered as part of personal tax may have varied as provisions have changed over time and according to how shares are held (whether directly or through institutional investors such as pension funds). We will take account of dividend tax credits paid to UK savers who hold stocks directly.¹²
- Throughout the document, we will not consider saving for bequests and we will therefore ignore both inheritance tax and the fact that there is no capital gains tax on assets at death.

3.2 Defining measures of the tax on the return to saving

The effective tax rate

The effective tax rate (ETR) is defined as the (percentage point) change in the annual real rate of return on the asset due to the relevant taxes, as a proportion of the real pre-tax return.¹³ We choose to express the tax rates relative to an expenditure tax baseline in which the individual saves out of taxed income but the return to saving and the resources that are withdrawn from the asset are not taxed. Under the framework described in Section 2, this is 'TEE' tax treatment since contributions to the account have been taxed (T) but returns are exempt (E) from tax and withdrawals are also exempt (E). This 'TEE' benchmark is the regime of taxation for saving in an ISA, and assets that match this benchmark have an effective tax rate of zero.

To show how this definition translates into ETRs, it is helpful to consider the numerical calculations described in Table 3. As well as illustrating how ETRs are calculated, the numbers in the table show that:

¹² But, in our historical comparisons, we will not take account of credits paid before 1997 to institutional investors such as pension funds.

¹³ This definition is very similar to that used in Capital Taxes Group, *Neutrality in the Taxation of Savings: An Extended Role for PEPs*, Commentary 17, IFS, London, 1989, which in turn drew on J. Hills, *Savings and Fiscal Privilege*, Report Series 9, IFS, London, 1984, and M. Saunders and S. Webb, 'Fiscal privilege and financial assets: some distributive effects', *Fiscal Studies*, 1988, 9(4), 51–69.

- With the same tax rate when contributions to and withdrawals from a savings account are made, TEE and EET tax treatment are equivalent in terms of tax on returns (columns 1 and 3).¹⁴
- Having a tax on the return to saving creates a positive ETR (column 2).
- Having a tax rate that increases between paying savings in and withdrawing savings from an account means that the final value of funds in the account is reduced by EET treatment relative to TEE treatment and so this is a positive ETR. This ETR can be very high in the case when the savings are held for one year (column 4).
- Having a tax rate that decreases between paying savings in and withdrawing savings from an account means that the final value of funds in the account is increased by EET treatment relative to TEE treatment and so this is a negative ETR (an effective *subsidy*). The magnitude of this ETR can be very large in the case when the savings are held for one year (column 5).

| | (1) | (2) | (3) | (4) | (5) |
|---|-------------|--------------|-------------|--------------------------------|-----------------------|
| | TEE | TTE | EET, | EET, | EET, |
| | | (cash | tax 20% | tax 20% | tax 40% |
| | | deposit) | | to 40% | to 20% |
| Contribution from taxed income | 100 | 100 | 100 | 100 | 100 |
| Contribution + tax relief | 100 | 100 | 125 | 125 | 166.67 |
| Nominal value after return | 105.06 | 104.05 | 131.33 | 131.33 | 175.10 |
| Nominal value after tax on withdrawal | 105.06 | 104.05 | 105.06 | 78.80 | 140.08 |
| Annual real rate of return | 3% | 2% | 3% | -22.75% | 37.33% |
| Change in | 3–3 = | 3–2 = | 3–3 = | 3–(–22.75) = | 3–37.33 = |
| annual real rate of return | 0 | 1 | 0 | 25.75 | -34.33 |
| ETR | 0/3 = 0% | 1/3 = 33% | 0/3 = 0% | 25.75/3 = <mark>858%</mark> | -34.33/3 = -1,144% |

Table 3. Illustrative examples of ETRs for savings held for one year

Notes: Inflation 2%, real return 3%. Figures for one year.

¹⁴ Note that our calculations are for an extra pound of saving, so the relevant tax rate for the ETR is the 'marginal rate' on the extra pound of income or saving.

The contribution required to match final wealth under the expenditure tax benchmark

The ETR is a useful summary measure, but unless one is extremely proficient at the mental arithmetic of calculating compound interest, it does not provide a very immediate measure of how the tax affects lifetime resources. We therefore provide the alternative measure of how much one would have to invest in each asset in order to match the final wealth from investing 100p in the TEE benchmark. In this case, 100 is the benchmark of equivalence with TEE.

Once we have calculated the ETR for each asset, it is in fact quite simple to calculate this second measure of how tax affects the asset return: one simply divides (the nominal value of) the final wealth in the account in the TEE benchmark by 1 plus the nominal annual return achieved in the asset in question.¹⁵ Thus for the case of the cash deposit account, the amount required is 101p (= 105.06/1.0405), which means that one must invest 101p in this account to achieve the same wealth after one year that could be achieved by investing 100p in the TEE account.

Table 4 records this measure for each of the assets considered in Table 3.

Table 4. Illustrative examples of contribution required to match TEE return on 100p after one year

| | TEE | TTE (cash deposit) | EET, tax 20% | EET, tax 20% to 40% | EET, tax 40% to 20% |
|-----------------------------------|------|--------------------------|-----------------|---------------------------|---------------------------|
| Amount needed to match TEE wealth | 100p | 101p | 100р | 133р | 75p |

Notes: Inflation 2%, real return 3%. Figures for one year.

3.3 Factors that affect these measures

It is important to realise that we have to make certain assumptions in order to calculate our ETR and 'contribution required' summary measures. In this section, we discuss two particularly pertinent assumptions: that of the investment horizon and that of the inflation rate.

The investment horizon

The investment horizon is the period for which an asset is held. Both the ETR and the 'contribution required' can vary with the investment horizon even when considering the same asset. In fact, the circumstances under

¹⁵ This is correct for the case in which the asset is held for one year; for a longer horizon, the formula involves dividing by 1 plus the nominal return all raised to the power t, where t is the number of years for which the asset is held.

which our measures will *not* vary with the investment horizon are relatively special:

- For the ETR, the horizon will not matter in the case when the tax is levied on the return to an asset as it accrues. Thus the ETR will be invariant to the horizon for the case in which the only difference from the TEE asset is a constant-rate tax on the return, as in the TTE cash deposit example.
- For the 'contribution required' measure, on the other hand, the horizon will not matter in the case when the taxation on the asset does not affect the rate at which the asset return compounds. That is, this measure is invariant when the deviation from TEE is extra (or reduced) tax on the initial investment or on the final wealth that is withdrawn from the asset. The examples of EET taxation with different tax rates at investment and withdrawal are cases of this kind.

Table 5 shows how much our measures vary with the investment horizon, for the example assets we have been considering so far. The dramatic changes in the numbers as the horizon changes are illustrative of the power of compound interest.

| | TEE | TTE (cash deposit) | EET, tax 20% | EET, tax 20% to 40% | EET, tax 40% to 20% |
|--------------------|------|--------------------------|-----------------|---------------------------|---------------------------|
| Effective tax rate | | | | | |
| 1-year horizon | 0% | 33% | 0% | 858% | -1,144% |
| 10-year horizon | 0% | 33% | 0% | 97% | -100% |
| 25-year horizon | 0% | 33% | 0% | 39% | -40% |
| Contrib. required | | | | | |
| 1-year horizon | 100p | 101p | 100p | 133p | 75p |
| 10-year horizon | 100p | 110p | 100p | 133p | 75p |
| 25-year horizon | 100p | 127p | 100p | 133р | 75p |

Table 5. When the investment horizon matters

Note: Inflation 2%, real return 3%.

In the examples that follow for UK savings products, we find assets, such as holdings of stocks, or wealth invested in rental housing, that are affected by tax on returns as they accrue and also by tax on final wealth holdings. As we shall see, for these assets, both measures of how tax affects the return to saving are dependent upon the horizon of the investment.

The inflation rate

Our measures of the effect of tax on asset returns have been calculated assuming a real return of 3% in each asset, achieved on top of a 2% rate of

inflation.¹⁶ Holding the real return fixed but changing the assumption about the rate of inflation will change the values computed for some assets. In particular, the inflation rate will matter for assets for which there is tax on the *nominal* return as this accrues, since a change in the inflation rate will change the return each year accruing to this asset, and the proportion of the real (i.e. net-of-inflation) return that is taken in tax. Table 6 illustrates, for a 10-year investment, how inflation matters for our illustrative assets: for these cases, inflation only matters for the TTE cash deposit account.

| | TEE | TTE (cash deposit) | EET, tax 20% | EET, tax 20% to 40% | EET, tax 40% to 20% |
|--------------------|------|--------------------------|-----------------|---------------------------|---------------------------|
| Effective tax rate | | | | | |
| 0% inflation | 0% | 20% | 0% | 97% | -100% |
| 2% inflation | 0% | 33% | 0% | 97% | -100% |
| 4% inflation | 0% | 46% | 0% | 97% | -100% |
| Contrib. required | | | | | |
| 0% inflation | 100p | 106p | 100p | 133p | 75p |
| 2% inflation | 100p | 110p | 100p | 133p | 75p |
| 4% inflation | 100p | 114p | 100p | 133р | 75p |

Table 6. The effects of inflation, over a 10-year investment

Note: Real return 3%.

3.4 Differences in rates of return, and uncertainty

It may seem odd that our discussion of saving and the taxation of assets has not mentioned differences in returns across different assets or differences in risk across different assets. It is therefore worthwhile saying a few words about each of these.

Our measures of the level of tax on returns assume a given level of return for all assets and assess how this would be affected by taxation. That is not to say that we believe that the pre-tax return to all assets is the same. Indeed, in a properly-functioning capital market, we might rather think that the after-tax returns would be equalised. Even if the capital market is not perfect, it is still the after-tax rate of return that will attract investors to different assets. Our measures are intended to capture how big a distortion the tax system creates to these after-tax returns, for different assets.

As well as the (expected) *level* of returns, the perceived riskiness of returns in different assets will also have a bearing on individuals' choices

¹⁶ The central CPI inflation target for the Bank of England is 2%.

about how to save. However, we will not take account of the level of risk in our calculations; instead, we consider the tax on a given return. Some of our analyses would not be affected by risk. For example, the equivalence between TEE and EET tax treatment in terms of the final return received by the individual is a result that holds even when there is risk.

On the other hand, when considering the distortions created by the tax system, risk cannot be entirely ignored. For example, there is a public finance literature on how a TTE-type 'comprehensive income tax' can be made equivalent to a TEE (or EET) 'comprehensive expenditure tax'. Such equivalence requires solving for equivalent rates (since TTE taxes in more places, it needs a lower tax rate), and considering risk and uncertainty, since the middle 'T' in TTE is taxing a potentially risky return and so potentially reducing the risk to an agent of holding assets. A recent result by Bond and Myles¹⁷ shows that when considering this, equivalence in terms of having the same distributions between the two systems might be achieved by matching TEE up to a TtE income tax that taxes only the risk premium, not the full return to investments.

In the light of this discussion of risk, the results in this paper should be interpreted bearing in mind that they concern how taxes affect the level of returns, not how taxes affect the risk associated with different assets.

4. Tax on the return to saving in different assets in the UK

Having considered how to measure the level of tax on the returns to saving, and the caveats concerning different returns and uncertainty that must be borne in mind when interpreting these measures, we can now look at the level of tax on the return to saving in different assets in the UK.

4.1 Tax on the return to saving for a basic-rate taxpayer

Tables 7 and 8 show the different measures of the tax on the returns to saving, for a range of assets held by an individual who is (and will continue to be) a basic-rate taxpayer.¹⁸ In order to show more clearly the differences between the tax on returns for the different assets, Figure 1 displays the ETRs from Table 7 in graphical form.

¹⁷ S. Bond and G. D. Myles, 'Income and consumption taxation: an equivalence result', mimeo, 2007.

¹⁸ We suppose that this taxpayer is not facing withdrawal of income-related benefits or tax credits. Interactions between the income-tax rate and the withdrawal of income-related benefits and credits are considered in Section 4.2.

| Asset | | Effective tax rate (%) |
|----------------------------------|---------------------|---------------------------|
| ISA (cash or stocks and shares) | | 0 |
| Cash deposit account | | 33 |
| Employee contribution to pension | (invested 10 years) | -21 |
| | (invested 25 years) | -8 |
| Employer contribution to pension | (invested 10 years) | -115 |
| | (invested 25 years) | -45 |
| Owner-occupied housing | | 0 |
| Rental housing ^a | (invested 10 years) | 30 |
| | (invested 25 years) | 28 |
| Stocks and shares ^b | (invested 10 years) | 10 |
| | (invested 25 years) | 7 |

Table 7. Effective tax rates for a range of assets (2008–09 tax system)

a. We have assumed capital gains that match price inflation, and real returns that accrue as rent. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the ETR would be 20% regardless of the duration of the investment, due to income tax on rent. The calculation also assumes that the rental house is owned outright, not purchased with a mortgage on which interest payments can be offset against taxable rental income when the property is let. If we were to incorporate such mortgage interest into the calculations, then the effective tax rates would be closer to 0. For example, if we assumed that there was mortgage interest such that half of the rental income could be offset, then the figures in this table would be reduced from 30 and 28 to 20 and 18 (and the effective tax rate with no capital gains tax liability would be 10%).

b. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the ETR would be 0 regardless of the duration of the investment, since (after accounting for dividend tax credits) interest/dividends on stocks is effectively untaxed for a basic-rate taxpayer. This explains why stocks and shares ISAs are sometimes described as only offering a tax advantage to higher-rate taxpayers. It should, though, be noted that this tax advantage would influence the decisions of basic-rate taxpayers who expect to become higher-rate taxpayers while they have funds in the stocks and shares ISA. *Notes:*

1. Calculations based on 3% real rate of return in all assets and 2% inflation. 2. The TEE treatment given in an ISA is the benchmark, so equivalent taxation implies 0 ETR. A negative tax rate then means a subsidy (relative to that benchmark), while a positive number means that there is tax on the real return.

3. In calculating the ETR for employer contributions to a pension, a basic-rate taxpayer has been assumed to have earnings below the upper earnings limit (UEL). We have also used contracted-in rates for National Insurance when performing the calculation for the employer contribution to a pension. Additionally, we have ignored any effect of the tax-free lump sum on pension credit entitlement through the asset test. *Source:* Author's calculations.

| Asset | | Required contribution (p) |
|----------------------------------|---------------------|------------------------------|
| ISA (cash or stocks and shares) | | 100 |
| Cash deposit account | (invested 1 year) | 101 |
| | (invested 10 years) | 110 |
| | (invested 25 years) | 127 |
| Employee contribution to pension | | 94 |
| Employer contribution to pension | | 72 |
| Owner-occupied housing | | 100 |
| Rental housing ^a | (invested 10 years) | 109 |
| | (invested 25 years) | 122 |
| Stocks and shares ^b | (invested 10 years) | 103 |
| | (invested 25 years) | 105 |

Table 8. Contribution to a range of assets required to match TEE return(2008–09 tax system)

a. We have assumed capital gains that match price inflation, and real returns that accrue as rent. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the figures would be 106 and 116 for the respective horizons. With a capital gains tax liability, if we were to incorporate mortgage interest that could be offset against half the rental income, then the figures would be 106 and 113, instead of 109 and 122.

b. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the figure would be 100 for any investment horizon, since (after accounting for dividend tax credits) interest/dividends on stocks is effectively untaxed for a basic-rate taxpayer.

Notes and Source: As for Table 7.

The most favourable tax treatment (a tax subsidy relative to the TEE benchmark) is seen to apply to saving in private pensions, which gets upfront relief from income tax and allows an individual to benefit from a 25% tax-free lump sum when he/she begins to draw his/her pension. Employer contributions to pensions also benefit from exemption from employee National Insurance contributions.

Direct holdings of stocks and shares have a positive tax on returns due to capital gains being taxed for this asset. Returns to wealth held in housing other than the primary residence are taxed through capital gains tax and through income tax on rents. Savings in a cash deposit account are subject to income tax on nominal returns.





Notes and Source: The data are those from Table 7 – see the Notes and Source for that table. Green and red bars respectively mean tax-favoured relative to, and more heavily taxed than, the TEE benchmark. A blue dash means a zero ETR.

4.2 The effect of different tax rates

The figures in Section 4.1 were all for an individual who is a basic-rate taxpayer at all points in the life cycle of the asset being considered. In this section, we first consider how the calculated ETRs and required contributions to match TEE are affected if we instead consider a higher-rate taxpayer. The second subsection concerns the effective tax on saving in a pension. It considers how the tax and benefit system can create a variety of combinations of tax rates at the points of contributing to, and of withdrawing money from, a pension. We will see that these different combinations can mean very different effective tax rates on pension saving.

Higher-rate taxpayers

Table 9 shows how the ETRs displayed in Table 7 are altered if we consider a higher-rate taxpayer. All of the non-zero tax rates are altered when we consider this taxpayer. In all cases, this is because income tax, or

exemption from income tax, is important in determining these ETRs.¹⁹ In most cases, the magnitude of the ETR is larger (i.e. the ETR is more positive or more negative) for the higher-rate taxpayer. The exception is the employer contribution to a pension, where the exemption from employee National Insurance contributions (NICs) is more favourable to basic-rate taxpayers, who face a higher NIC rate.

Table 10 shows the same information as Table 9 but for the 'contribution required to match TEE' measure rather than the ETR measure.

| - | | | |
|----------------------------------|---------------------|-----------|----------|
| Asset | | Effective | tax rate |
| | | (? | %) |
| | | BRT | HRT |
| ISA (cash or stocks and shares) | | 0 | 0 |
| Cash deposit account | | 33 | 67 |
| Employee contribution to pension | (invested 10 years) | -21 | -53 |
| | (invested 25 years) | -8 | -21 |
| Employer contribution to pension | (invested 10 years) | -115 | -102 |
| | (invested 25 years) | -45 | -40 |
| Owner-occupied housing | | 0 | 0 |
| Rental housing ^a | (invested 10 years) | 30 | 50 |
| | (invested 25 years) | 28 | 48 |
| Stocks and shares ^b | (invested 10 years) | 10 | 35 |
| | (invested 25 years) | 7 | 33 |

Table 9. Comparing ETRs for someone who is a basic-rate taxpayer (BRT) throughout life and those for someone who is a higher-rate taxpayer (HRT) throughout life

a. We have assumed capital gains that match price inflation, and real returns that accrue as rent. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred, then the ETR would be 40% (20%) for the higher-rate (basic-rate) taxpayer, regardless of the horizon. With a capital gains tax liability, if we were to incorporate mortgage interest that could be offset against half the rental income, then the figures for the higher-rate taxpayer would be 30 and 28 (and on the same basis for the basic-rate taxpayer, they would be 20 and 18 – see note a to Table 7). b. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred, then the ETR would be 25% for the higher-rate.

rate taxpayer (and 0 for the basic-rate taxpayer – see note b to Table 7) for any investment horizon.

Notes and Source: As for Table 7.

¹⁹ In the case of stocks and shares, a dividend tax credit offsets income tax on returns for the basic-rate taxpayer but does so only partially for the higher-rate taxpayer.

| Asset | | Required contribution (p) | |
|----------------------------------|---------------------|------------------------------|-----|
| | | BRT | HRT |
| ISA (cash or stocks and shares) | | 100 | 100 |
| Cash deposit account | (invested 1 year) | 101 | 102 |
| | (invested 10 years) | 110 | 121 |
| | (invested 25 years) | 127 | 163 |
| Employee contribution to pension | | 94 | 86 |
| Employer contribution to pension | | 72 | -75 |
| Owner-occupied housing | | 100 | 100 |
| Rental housing ^a | (invested 10 years) | 109 | 116 |
| | (invested 25 years) | 122 | 142 |
| Stocks and shares ^b | (invested 10 years) | 103 | 111 |
| | (invested 25 years) | 105 | 127 |

Table 10. Contribution to a range of assets required to match TEE return

a. We have assumed capital gains that match price inflation, and real returns that accrue as rent. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred, then the figures for the higher-rate (basic-rate) taxpayer would be 112 and 134 (106 and 116) for the respective horizons. With a capital gains tax liability, if we were to incorporate mortgage interest that could be offset against half the rental income, then the figures for a higher-rate (basic-rate) taxpayer would be 109 and 122 (106 and 113), instead of 116 and 142 (109 and 122).

b. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred, then the figures for the higher-rate (basic-rate) taxpayer would be 108 and 120 (100 and 100) for the respective horizons. *Notes and Source:* As for Table 7.

The effect for pensions of movements between tax rates

Tables 11 and 12 show our different measures of the tax on the return to saving in a pension, for taxpayers who face a variety of combinations of tax rates while working and retired. Compared with the case of the basic-rate taxpayer, these tables show that other combinations of tax rates can have a much bigger effect on the tax on returns than simply considering a higher-rate taxpayer. In particular, among the cases considered, contributing to a pension while on the steep taper of the child and working tax credits, and facing a lower effective tax rate in retirement, is a highly tax-favoured strategy. This is largely because the effective tax rate due to the tax credit taper is such that an extra pound of contribution to a pension only costs 41p of disposable income for the saver.²⁰ On the other hand, contributing while paying basic-rate income tax but expecting to be on the savings

²⁰ A fuller discussion of this and of the incentive effects of the pension credit is included in R. Blundell, C. Emmerson and M. Wakefield, 'The importance of incentives in influencing private retirement saving: known knowns and known unknowns', IFS Working Paper 06/09, 2006 (<u>http://www.ifs.org.uk/wps/wp0609.pdf</u>, doi: <u>10.1920/wp.ifs.2006.0609</u>).

credit taper of the pension credit in retirement is seen to be subject to a positive ETR.

| Asset | | Effective tax rate |
|-------------------------------|-----------------------------|--------------------|
| | | (%) |
| Employee contribution to a pe | | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | -21 |
| Higher rate (40%) | Higher rate (40%) | -53 |
| Higher rate (40%) | Basic rate (20%) | –122 |
| Basic rate (20%) | Pension credit taper (40%) | 46 |
| Tax credit taper (59%) | Basic rate (20%) | -260 |
| Tax credit taper (59%) | Pension credit taper (40%) | –189 |
| Employee contribution to a pe | ension (25-year investment) | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | -8 |
| Higher rate (40%) | Higher rate (40%) | -21 |
| Higher rate (40%) | Basic rate (20%) | -48 |
| Basic rate (20%) | Pension credit taper (40%) | 18 |
| Tax credit taper (59%) | Basic rate (20%) | -102 |
| Tax credit taper (59%) | Pension credit taper (40%) | -74 |
| Employer contribution to a pe | | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | -115 |
| Higher rate (40%) | Higher rate (40%) | -102 |
| Higher rate (40%) | Basic rate (20%) | -171 |
| Basic rate (20%) | Pension credit taper (40%) | -47 |
| Tax credit taper (59%) | Basic rate (20%) | -423 |
| Tax credit taper (59%) | Pension credit taper (40%) | -349 |
| Employer contribution to a pe | | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | -45 |
| Higher rate (40%) | Higher rate (40%) | -40 |
| Higher rate (40%) | Basic rate (20%) | -67 |
| Basic rate (20%) | Pension credit taper (40%) | –19 |
| Tax credit taper (59%) | Basic rate (20%) | -163 |
| Tax credit taper (59%) | Pension credit taper (40%) | -136 |

Table 11. Effective tax rates on returns to pension saving, for different combinations of working-life and retirement tax rates

Notes and Source: As for Table 7.

| Asset | | Required contribution (p) |
|------------------------------------|----------------------------|------------------------------|
| Employee contribution to a pension | | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | 94 |
| Higher rate (40%) | Higher rate (40%) | 86 |
| Higher rate (40%) | Basic rate (20%) | 71 |
| Basic rate (20%) | Pension credit taper (40%) | 114 |
| Tax credit taper (59%) | Basic rate (20%) | 48 |
| Tax credit taper (59%) | Pension credit taper (40%) | 59 |
| Employer contribution to a pension | | |
| Tax rate in work | Tax rate in retirement | |
| Basic rate (20%) | Basic rate (20%) | 72 |
| Higher rate (40%) | Higher rate (40%) | 75 |
| Higher rate (40%) | Basic rate (20%) | 62 |
| Basic rate (20%) | Pension credit taper (40%) | 87 |
| Tax credit taper (59%) | Basic rate (20%) | 31 |
| Tax credit taper (59%) | Pension credit taper (40%) | 38 |

Table 12. Contribution to pension required to match TEE, for different combinations of working-life and retirement tax rates

Notes and Source: As for Table 7.

4.3 The effect of inflation

Tables 13 and 14 show how the different measures in Tables 7 and 8 are affected when we change the assumption about price inflation. In particular, we consider zero inflation and 4% inflation, and how these compare with the 2% benchmark of the earlier tables. As anticipated in

| Asset | | Effective tax rate | | |
|----------------------------------|---------------------|--------------------|------|------|
| | | | (%) | |
| | Inflation: | 0% | 2% | 4% |
| ISA (cash or stocks and shares) | | 0 | 0 | 0 |
| Cash deposit account | | 20 | 33 | 46 |
| Employee contribution to pension | (invested 10 years) | -21 | -21 | -21 |
| | (invested 25 years) | -8 | -8 | -8 |
| Employer contribution to pension | (invested 10 years) | -115 | -115 | -115 |
| | (invested 25 years) | -45 | -45 | -45 |
| Owner-occupied housing | | 0 | 0 | 0 |
| Rental housing ^a | (invested 10 years) | 20 | 30 | 38 |
| | (invested 25 years) | 20 | 28 | 33 |
| Stocks and shares | (invested 10 years) | 0 | 10 | 38 |
| | (invested 25 years) | 0 | 7 | 33 |

Table 13. Effective tax rates for a range of assets and different levels of inflation

a. With mortgage interest that could be offset against half the rental income, the effective tax rates for rental housing would be reduced by 10 percentage points. *Notes and Source:* As for Table 7.

Section 3.3, since we are considering how tax affects real returns, inflation matters in cases when tax is proportional to the nominal return (i.e. the return including inflation). This is because the tax on the nominal return becomes bigger, relative to the real return, as inflation increases. This effect explains why inflation affects our measures of the tax on the return to saving in cash deposits, in housing other than the primary residence or in stocks and shares.

| Asset | | Required contribution | | |
|----------------------------------|---------------------|-----------------------|-----|-----|
| | | | (p) | |
| | Inflation: | 0% | 2% | 4% |
| ISA (cash or stocks and shares) | | 100 | 100 | 100 |
| Cash deposit account | (invested 1 year) | 101 | 101 | 102 |
| | (invested 10 years) | 108 | 110 | 112 |
| | (invested 25 years) | 121 | 127 | 133 |
| Employee contribution to pension | | 94 | 94 | 94 |
| Employer contribution to pension | | 72 | 72 | 72 |
| Owner-occupied housing | | 100 | 100 | 100 |
| Rental housing ^a | (invested 10 years) | 106 | 109 | 112 |
| | (invested 25 years) | 116 | 122 | 127 |
| Stocks and shares | (invested 10 years) | 100 | 103 | 105 |
| | (invested 25 years) | 100 | 105 | 109 |

Table 14. Contribution to a range of assets required to match TEE return, under different levels of inflation

a. With mortgage interest that could be offset against half the rental income, the figures for rental housing would (in order from left to right) be 103, 106 and 108 for the 10-year investment and 108, 113 and 118 for the 25-year investment. *Notes and Source:* As for Table 7.

4.4 The tax on savings over time

Finally, in Tables 15 and 16 and Figure 2, we consider how the measures in Tables 7 and 8 would have looked if we had been considering the tax system of 1978–79, 1990–91 or 1997–98, instead of that of 2008–09.²¹ The chosen years happen to coincide with changes in political leadership, but throughout these years a general trend of convergence in effective tax

²¹ Throughout this section, in order to isolate the effect of the tax system, we assume an inflation rate of 2%. Arguably, another policy shift over the period in question has been towards a greater emphasis on low inflation. As noted in the last section, lower inflation can affect effective tax rates, and, of those assets shown in Figure 2, it would tend to reduce the effective tax rate on cash deposits. Thus the successful achievement of a reduction in inflation (and expected inflation) would tend to mean the trend towards the equalisation of effective tax rates is even stronger than the graph suggests.

rates is evident.²² Some of the major tax changes that have underpinned this convergence have been:

- a general reduction in income and capital gains tax rates;
- the abolition of mortgage interest relief;
- changes in the way dividend income is taxed, particularly tax credits for dividend income which, since the mid-1990s, mean that basic-rate taxpayers effectively do not pay tax on dividend income.

| Asset | | Effective tax rate | | | |
|--|-------------------|--------------------|---------|---------|---------|
| | | (%) | | | |
| | | 1978–79 | 1990–91 | 1997–98 | 2008–09 |
| ISA (cash or stocks and shares) | | n/a | n/a | n/a | 0 |
| Personal Equity Plan (PEP) | | n/a | 0 | 0 | n/a |
| Tax-Exempt Special Savings Account (TESSA) | | n/a | n/a | 0 | n/a |
| Cash deposit account | | 55 | 41 | 33 | 33 |
| Employee contrib. to pension | (invested 10 yrs) | -40 | -28 | -25 | -21 |
| | (invested 25 yrs) | -16 | -11 | -10 | -8 |
| Stocks and shares ^a | (invested 10 yrs) | 57 | 25 | 0 | 10 |
| | (invested 25 yrs) | 55 | 25 | 0 | 7 |
| Primary residence ^b | (10-yr mortgage) | -22 | -16 | -15 | 0 |
| | (25-yr mortgage) | -15 | -12 | -11 | 0 |

Table 15. Effective tax rates for a range of assets in four years

a. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the ETR would be 0 regardless of the duration of the investment, since (after accounting for dividend tax credits) interest/dividends on stocks is effectively untaxed for a basic-rate taxpayer. This explains why stocks and shares ISAs are sometimes described as only offering a tax advantage to higher-rate taxpayers. In 1990–91 and 1997–98, indexation provisions in capital gains tax mean that the assumption that capital gains exactly match price inflation results in no capital gains tax being incurred. In 1978–79, we have used the tax rate of 15% for CGT, which applied to gains between £1,000 and £5,000; there was no tax on the first £1,000 of gains and there were higher tax rates for larger gains

(http://www.hmrc.gov.uk/stats/capital_gains/tableA-7.pdf).

b. We have assumed that when an extra pound is invested in housing, half of this is funded through an interest-only mortgage, and that the value of the mortgage is below the mortgage interest relief threshold and this relief is claimed against the basic rate of income tax. From 1974–75, mortgage interest relief could be claimed on loans of up to £25,000; this increased to £30,000 in 1983–84 and was restricted to one relief per married couple in 1988 (see http://www.hmrc.gov.uk/stats/mir/intro.pdf). Notes and Source: As for Table 7.

²² This pattern would be less smooth if we had filled in all years, but the general trend is clear. Annual time series for ETRs calculated using a similar method to ours, for the period 1978–90, were shown as figures 1 and 2 of Capital Taxes Group, *Neutrality in the Taxation of Savings: An Extended Role for PEPs*, Commentary 17, IFS, London, 1989.

Changes in capital gains tax indexation provisions also reduced the ETRs on some assets (notably shares) during the early part of the period considered in this section, but this indexation no longer applies in 2008–09.

| Asset | | Required contribution (%) | | | |
|--|---------------------|------------------------------|---------|--------------|---------|
| | | 1978–79 | 1990–91 | , 1997–98 | 2008–09 |
| ISA (cash or stocks and shares) | | n/a | n/a | n/a | 100 |
| Personal Equity Plan (PEP) | | n/a | 100 | 100 | n/a |
| Tax-Exempt Special Savings Account (TESSA) | | n/a | n/a | 100 | n/a |
| Cash deposit account | (invested 1 year) | 112 | 101 | 101 | 101 |
| | (invested 10 years) | 147 | 113 | 110 | 110 |
| | (invested 25 years) | 119 | 135 | 127 | 127 |
| Employee contribution to pension | | 89 | 92 | 93 | 94 |
| Stocks and shares ^a | (invested 10 years) | 118 | 108 | 100 | 103 |
| | (invested 25 years) | 150 | 120 | 100 | 105 |
| Primary residence ^b | (10-year mortgage) | 94 | 95 | 96 | 100 |
| | (25-year mortgage) | 90 | 92 | 92 | 100 |

Table 16. Contribution required to match TEE, for a range of assets in four years

a. We have assumed capital gains that match price inflation, and real returns that accrue as interest or dividends. We assume that a capital gains tax liability is incurred. If there were no capital gains tax incurred (for example, because capital gains do not exceed the threshold for CGT), then the figure would be 100 for any investment horizon, since (after accounting for dividend tax credits) interest/dividends on stocks is effectively untaxed for a basic-rate taxpayer.

b. We have assumed that when an extra pound is invested in housing, half of this is funded through an interest-only mortgage, and that the value of the mortgage is below the mortgage interest relief threshold and this relief is claimed against the basic rate of income tax. From 1974–75, mortgage interest relief could be claimed on loans of up to £25,000; this increased to £30,000 in 1983–84 and was restricted to one relief per married couple in 1988 (see <u>http://www.hmrc.gov.uk/stats/mir/intro.pdf</u>). *Notes and Source:* As for Table 7.



Figure 2. Effective tax rates for a range of assets in selected years

Notes and Source: As for Table 15.

5. Conclusion

The main aim of this document has been to quantify how differently the UK tax system taxes the return to different assets. We have seen that:

- UK households hold their assets in a range of forms that face different tax treatments.
- These differences in tax treatment can equate to quite big differences in the level of the tax on the return to these assets.
- Differences in tax treatment can be due to the tax rates that an individual faces, as well as to the types of asset in which he or she chooses to save.
- Tax rates on the return to assets have generally converged over the last 30 years.