

PENSIONS POLICY INSTITUTE

PPPI

Comparison of  
pension outcomes  
under EET and TEE  
tax treatment



## Comparison of pension outcomes under EET and TEE tax treatment

Executive Summary	1
Introduction	4
1. Impact of tax treatment on a single contribution	8
2. Impact of tax relief on saving through working life	14
3. Cost and distribution of reforms to tax relief	27
4. Lifetime Allowance and Annual Allowance equivalence	36
Appendix: Assumptions and methodology	39
Acknowledgements and contact details	46
References	47

A Research Report by John Adams and Tim Pike

Published by the Pensions Policy Institute

© September 2015

ISBN 978-1-906284-35-0

[www.pensionspolicyinstitute.org.uk](http://www.pensionspolicyinstitute.org.uk)



## Executive Summary

In the Budget of 8 July 2015, the Chancellor, George Osborne, announced a consultation into the use of tax relief to “strengthen the incentive to save” for retirement. The ABI has asked the PPI to analyse the impact of a number of potential reforms to the tax relief system, ranging from adjustments to the current system, through to more fundamental changes in the way the pension tax relief works.

This report sets out the impact that the potential policy reforms might have on the level of money that people of different ages and in different tax positions could accrue by retirement and their resulting post-tax pension wealth. It also considers the impact of potential reforms on the cost of tax relief to the Exchequer

### **Chapter one: Impact of tax treatment on a single contribution**

Chapter one sets out analysis of a £1,000 contribution made by individuals under the ABI’s set of potential reform options. Using a single £1,000 contribution for individuals in different circumstances serves to set a level playing field for comparison. Under this approach the difference between outcomes for people of different marginal tax rates is not obscured by the variations in the amount of contributions that each type of taxpayer could afford to make.

#### Chapter one: Key points

- The current EET system is beneficial to all individuals. Under the current EET system some of the pension may be received with no tax at all being paid on it. This is because of:
  - the tax free lump sum,
  - and the fact that state pension does not use up all of the Personal Allowance in retirement, so some of the private pension income may not be pensionable.
- EET Tax Systems are beneficial to people who are subject to a tax rate in retirement which is lower than the rate on which they got tax relief.
- A flat rate EET system with a flat rate between 20% and 40% has a redistributive effect, improving the outcomes for basic rate taxpayers and worsening outcomes for higher and additional rate taxpayers.
- A pure TEE system without matching contributions is likely to reduce pension outcomes, because, with tax being paid up front, none of the pension is received tax free, and the tax paid is at the individual’s marginal rate in work, rather than an average rate after retirement.
- Giving a matching contribution on a TEE system is similar to a flat rate EET system in the accumulation phase.
- A TEE system with significant matching contributions could increase the outcomes for individuals.

## **Chapter two: Impact of tax relief on saving through working life**

Chapter two considers the whole working life impact of the various tax regimes on individuals and the extent to which their outcomes are affected by working patterns.

The results in chapter two are set out in a measure that is similar to the 'taxed fund value' defined in chapter one. It is a single figure that sets out the value of their pension saving that is available to them after retirement in terms of the total value of the net income they might achieve under the potential policy reforms.

### Chapter two: Key Points

- Individuals who are basic rate taxpayers through their working life tend to do better under a single tier which offers tax relief at greater than 20%.
- Those who have significant periods as higher rate taxpayers, including those who may have started as basic rate taxpayers, do less well under TEE systems or the single tier EET system, requiring a high matching contribution or rate of tax relief rate to maintain the value under the current system.
- Individuals with salary growth that leads them to move from basic rate to higher rate tax, will experience a combination of the basic rate taxpayer and higher rate taxpayer impact. The particular impact on them will depend on the amount of time and level of contributions made while basic and higher rate taxpayers.
- Higher rate taxpayers derive a lot of value in their pension from the 40% tax relief. An EET system with a reduced level of tax relief will leave them worse off. Even a TEE system with a 50% matched contribution could leave them worse off compared with the current system, if they would likely be a basic rate taxpayer in retirement.
- For those who would be eligible for means tested benefits, those benefits may be able to offset some of the loss in a switch from the current system to a TEE system. However that would increase the cost on the government of providing means tested benefits.

### **Chapter three: Cost and distribution of reforms to tax relief**

Chapter three sets out the first year static impact on the cost to the Exchequer of a number of alternative reform options. It goes on to consider how the distribution of tax relief by salary level and by age may change under a flat rate pension tax relief system.

#### Chapter three: Key Points

- Adjusting the tax relief on contributions changes the cost to the government of the tax relief.
- An EET system with a flat rate of slightly over 30% might be implemented for around the same initial cost of tax relief as the current system.
- A pure TEE system will lead to an initial reduction in cost as the tax relief on contributions falls to zero, however there will be a longer term cost when the resulting pensions are paid out with no tax payable.
- A TEE system with matching contributions introduces upfront costs to the Exchequer in addition to the loss of future tax revenue on pension payments.
- The distribution of tax relief under a flat rate system reflects the net contribution to pension schemes.
- The age distribution of tax relief is relatively unaffected by introducing a flat rate pension, however there is a slight redistribution from middle ages to younger, and to older pension savers.

### **Chapter four: Lifetime Allowance and Annual Allowance equivalence**

Chapter four considers making an adjustment to the system of pension tax free allowances, the Annual Allowance and the Lifetime Allowance. The reform option considered is that DC schemes would be subject to the Annual Allowance but not the Lifetime Allowance, and that DB schemes would be subject to the Lifetime Allowance but not the Annual Allowance. The reasoning behind this is that DB schemes and DC schemes are each subject to a single element of the Allowance system, the one that is more suitable for that type of scheme. It would be desirable for the DB and DC elements of the system to be consistent.

#### Chapter four: key points

- It may be possible to consider Allowances in terms of equivalence and thereby apply different types of allowances to different forms of pension savings.
- Changes to allowances which are designed to hit high earners can have impacts on more modest earners if they have been long-term members of DB pension schemes.

## Introduction

In the Budget of 8 July 2015, the Chancellor, George Osborne, announced a consultation into the use of tax relief to “strengthen the incentive to save” for retirement. The ABI has asked the PPI to analyse the impact of a number of potential reforms to the tax relief system, ranging from adjustments to the current system, through to more fundamental changes in the way the pension tax relief works.

This report sets out the impact that the potential policy reforms might have on the level of money that people of different ages and in different tax positions could accrue by retirement and their resulting post-tax pension wealth. It also considers the impact of potential reforms on the cost of tax relief to the Exchequer. The final focus of this report is to consider a system which limits tax relief on Defined Benefit pension savings using an Annual Allowance only, and limits Defined Benefit saving by a Lifetime Allowance that is calculated to be an equivalent of the Defined Contribution Annual Allowance.

### *Notation of tax relief*

The tax treatment of pensions in the UK is often abbreviated to three letters each of which is either an “E” or a “T” (standing for Exempt or Taxed respectively). For example, the current system is referred to as EET. Each letter refers to a different part of the lifespan of a contribution to a pension scheme. The first part, the first E, represents the treatment of the contribution when it is made. The second letter represents the tax treatment on investment returns on contributions. And the third letter, in the current system a T, represents the tax treatment when the proceeds of pensions saving are accessed by the individual.

So an EET system is one where contributions are exempt from tax, investment returns are exempt from tax, but the proceeds of pension savings are taxable. This report also considers another type of pension system, known as TEE, where the contributions are taxable, but thereafter investment returns are exempt and the proceeds are not taxed in retirement.

### *Tax systems analysed in this report*

The reforms that the ABI asked the PPI to consider are as follows:

- Maintain the status quo (i.e. a EET system with tax paid in retirement at the individual’s marginal rate, but with access to 25% of the fund tax free);
- A reformed system similar to the current system but without the option to take any cash as tax free;
- A single rate of tax relief at 20%, 25%, 30% and 33%;
- A TEE system with no matching payment;
- A TEE system with matching payments between 10 and 50 percent.

***The current tax relief on pensions system in the UK<sup>1</sup>***

The current UK tax treatment of private pension provision is generally expressed as EET – (Exempt, Exempt, Taxed). Contributions into a pension fund are exempt from tax, the accumulation of the fund is partially exempt from tax and the majority of the proceeds are taxable.

As a portion of the fund sum can be taken tax free after minimum-pension-age, the final ‘T’ is only partial. The accumulation is also not fully ‘E’. The extent of taxation on the fund accumulation depends on the mix of investments within the pension fund, and the marginal tax rate paid by the individual. The roll up of funds invested directly in bonds, property or cash is completely tax free. However, since 1997, dividend income from equities has been taxed at a Corporation Tax rate, although capital gains remain tax free.

***Allowances***

The amount by which an individual can benefit from tax advantages is controlled by two ‘Allowances’: Annual and Lifetime. These Allowances apply to each individual, and across all registered pension schemes that the individual uses for providing benefits, regardless of the time of joining.<sup>2</sup>

An individual can make contributions to any number of private pension schemes and receive tax relief on the amount saved in that year up to the Annual Allowance. The Annual Allowance for 2015/16 is £40,000.<sup>3</sup> Contributions above this level are taxed at an individual’s marginal tax rate.

The Lifetime Allowance is applied when the individual begins to receive a benefit from his or her pension saving. If the value of the pension saving at this time is above the Lifetime Allowance (£1.25 million for 2015/16),<sup>4</sup> an additional tax charge is applied. The Lifetime Allowance will be reduced to £1 million in April 2016.<sup>5</sup>

***Contributions – ‘Exempt’***

Employer contributions are paid gross. Making pension contributions on behalf of employees has an additional tax advantage for the employer, as employers’ pension contributions are not eligible for National Insurance contributions.

Employee contributions can be offset against income tax: individuals receive tax relief at their highest marginal rate. In some cases full relief is available immediately whereas in other cases basic rate relief is given immediately and higher rate relief is reclaimed through the end-of-year tax return.

<sup>1</sup> Adapted from PPI (2015) *The Pensions Primer: a guide to the UK pensions system*

<sup>2</sup> Although exemptions to the lifetime allowance are available to protect existing rights

<sup>3</sup> [www.hmrc.gov.uk/pensionschemes/understanding-aa.htm](http://www.hmrc.gov.uk/pensionschemes/understanding-aa.htm)

<sup>4</sup> [www.hmrc.gov.uk/pensionschemes/understanding-la.htm](http://www.hmrc.gov.uk/pensionschemes/understanding-la.htm)

<sup>5</sup> [www.gov.uk/government/publications/budget-2015-hm-revenue-and-customs-overview/hmrc-overview#savings-personal-tax-national-insurance-and-pensions](http://www.gov.uk/government/publications/budget-2015-hm-revenue-and-customs-overview/hmrc-overview#savings-personal-tax-national-insurance-and-pensions)

In any year, if the total contribution made to Defined Contribution schemes and/or the increase in value of benefits under Defined Benefit schemes for an individual are more than the Annual Allowance of £40,000 in 2015/16, the contributions in excess will be taxed at the rate of 40% on the excess.<sup>6</sup>

#### ***Fund Accumulation – mainly ‘Exempt’***

The pension fund accumulates in a tax-favoured environment: there is no tax on interest or income received gross and no tax on any realised capital gains. However, since 1997 pension funds have not been able to reclaim any tax paid on dividends on UK equities.

#### ***Proceeds – mainly ‘Taxable’***

From age 55, up to 25% of pension savings can be taken as a tax free lump sum. In a Defined Benefit pension scheme, the lump sum is often achieved by taking a reduced level of pension income. The remaining pension income is treated as income and subject to income tax rules. In a Defined Contribution pension scheme, the remainder of the fund can be withdrawn flexibly or some, or all of it can be used to purchase a retirement income product such as a lifetime, fixed or flexible annuity, an income drawdown product, or another product which offers income, savings and/or insurance. Because of the newness of the freedom and choice policy of flexible access, it is not yet known exactly how many different products might be available or what they will look like. However, people’s income in retirement from pension savings will be taxed at their marginal rate at the point of receipt.

Pension funds in excess of the Lifetime Allowance can still be taken as pension benefit, but they are subject to a different tax charge. When taken as a cash lump sum, the excess is subject to 55% tax. When taken as a pension benefit, the excess is subject to 25% tax, with the income payments taxable as earned income.

#### ***National Insurance Contributions***

This paper does not address the notional impact of changing tax relief on National Insurance Contributions (NICs). NICs are payable on employee contributions to pension schemes, in the same way that they are paid on the rest of the employee’s salary. So changing tax relief does not impact the level of NICs paid unless there is a change in the employees’ total gross salary. NICs are not paid on employer contributions to pension schemes. Therefore, NICs on employer pension contributions are zero irrespective of the level of employer contributions. The NICs cashflow to the government does not change unless there is a change in the amount of total salaries paid to employees, for example as a result of an increase in salary sacrifice schemes. However, the Government has stated that NICs are outside the scope of the consultation. The PPI has not investigated NICs any further for this paper.

<sup>6</sup> [www.hmrc.gov.uk/pensionschemes/understanding-aa.htm](http://www.hmrc.gov.uk/pensionschemes/understanding-aa.htm)

***Structure of the report***

Chapter one - sets out analysis of a £1,000 contribution made by individuals under the ABI's set of potential reform options.

Chapter two - considers the whole working life impact of the various tax regimes on individuals and the extent to which their outcomes are affected by working patterns.

Chapter three - sets out the first year static impact on the cost to the Exchequer of a number of the reform options. It goes on to consider how the distribution of tax relief by salary level and by age may change under a flat rate pension tax relief system.

Chapter four - considers making an adjustment to the system of pension tax free allowances, the Annual Allowance and the Lifetime Allowance.

## **Chapter one: Impact of tax treatment on a single contribution**

This chapter sets out analysis of a £1,000 contribution made by individuals under the ABI's set of potential reform options. Using a single £1,000 contribution for individuals in different circumstances serves to set a level playing field for comparison. Under this approach the difference between outcomes for people of different marginal tax rates is not obscured by the variations in the amount of contributions that each type of taxpayer could afford to make.

The analysis presents results in terms of a 'taxed fund value' this is a hypothetical fund value which represents the proceeds of contribution(s) in terms of a fund available to the individual, after taking into account that some of their pension fund will be subject to tax.

### **Analysis**

The analysis for the £1,000 contribution analysis was performed in the PPI's purpose built individual tax relief model. This model applies a given tax relief scenario to a pattern of contributions. It then models the fund growth, allowing for charges, to produce a fund at retirement. A post retirement tax treatment is then applied to establish the position of the individual under a given tax relief regime.

### **Assumptions**

The assumptions used in the modelling for this report are set out in Appendix 1. In addition we have made two simplifying assumptions regarding the behavior of individuals:

- Individuals are assumed to retire when they reach their state pension age.
- State pension age is assumed to increase in line with currently projected increases in life expectancy.

### **Tax position<sup>7</sup>**

An individual's pre and post retirement tax position affects the amount of tax relief they may receive, and the tax they may be expected to pay after retirement under certain of the possible reform options. The following tax positions were considered:

<sup>7</sup> See <https://www.gov.uk/government/publications/rates-and-allowances-income-tax> for a list of current tax rates and allowances.

**Table 1: Tax positions used in single contribution analysis**

<b>Tax position scenario</b>	<b>Pre-retirement marginal rate</b>	<b>Post-retirement marginal rate</b>
<b>Scenario 1: N-N</b>	None	None
<b>Scenario 2: B-N</b>	Basic rate	None
<b>Scenario 3: B-B</b>	Basic rate	Basic rate
<b>Scenario 4: H-B</b>	Higher rate	Basic rate
<b>Scenario 5: H-H</b>	Higher rate	Higher rate
<b>Scenario 6: A-H</b>	Additional rate	Higher rate
<b>Scenario 7: A-A</b>	Additional rate	Additional rate

*The 'taxed fund value'*

The following results present a hypothetical post-tax fund at retirement. What this means is that the fund is split into two parts, the part of the fund that is taxable, and the part of the fund that can be taken as tax free (in most scenarios 25% of the fund can be taken as a 'tax free lump sum' (TFLS) ). Tax at the individual's marginal post retirement rate is applied to the taxable part of the fund, then the tax free part is added back on. This can be considered as representative of the fund available to the individual, after taking into account that some of their pension fund will be subject to tax.

This brings together all elements of the post-retirement value of the fund resulting from the £1,000 pension contribution into a single figure. This figure is called the 'taxed fund value' in the analysis.

The results tables are presented in full with commentary for 25 year olds. The other age groups exhibit exactly the same patterns of results. This is because, for a single contribution, the only difference between a contribution made by a 25 year old and a 60 year old is the amount of time that it earns investment returns. That investment return difference affects all people in an age cohort equally under each reform scenario, so does not change the relative impact of a reform or the relative difference between people in different tax positions. To provide commentary for each age group would therefore be merely repetitive, however, tables for the remaining ages are provided online.<sup>8</sup>

For individuals of a given age, the tables show the 'taxed fund value', according to their pre and post-retirement marginal tax rate under each of the potential tax relief reform options.

<sup>8</sup> PPI website provide link when tables are uploaded

Table 2 sets out the ‘taxed fund value’ of 25-year-old individuals who save £1,000 into a pension scheme according to their marginal tax rate under EET tax relief systems. Each column reflects the taxed fund under the given scenario, rather than the difference from the current system.

**Table 2: Taxed Fund value of 25 year olds under an EET system as a result of a £1,000 contribution<sup>9</sup>**

Tax Position (pre/post)	Current	Abolish TFLS	Flat rate 20% relief	Flat rate 25% relief	Flat rate 30% relief	Flat rate 33% relief
Non/Non	£1,680	£1,680	£1,680	£1,792	£1,920	£2,006
Basic/Non	£1,680	£1,680	£1,680	£1,792	£1,920	£2,006
Basic/Basic	£1,428	£1,344	£1,428	£1,523	£1,632	£1,705
Hghr/Basic	£1,904	£1,792	£1,428	£1,523	£1,632	£1,705
Hghr/Hghr	£1,568	£1,344	£1,176	£1,255	£1,344	£1,404
Addnl/Hghr	£1,711	£1,467	£1,176	£1,255	£1,344	£1,404
Addnl/Addnl	£1,619	£1,344	£1,113	£1,187	£1,272	£1,329
Key	< 95% of current		Between 95% and 105% of current		> 105% of current	

People who drop down a tax bracket do well under the current marginal tax rate based EET system because they receive tax relief at a higher level than they eventually pay tax.

Under the current EET system a £1,000 contribution from net pay made by a 25 year old is most valuable to someone who is a higher rate taxpayer before retirement, but a basic rate taxpayer in retirement. This is because of the difference between the tax relief received on the contribution (40%) and the tax paid on the eventual payment (20%). The current analysis only considers people remaining at their current tax level or dropping down a rate. If we were to model an additional rate taxpayer pre-retirement who is a basic rate taxpayer after retirement then the ‘taxed fund value’ would be even greater.

Individuals who do not change tax band do less well under the current tax relief system. This is because they do not make a gain on their relief compared to the tax they pay. However they do make a gain on a portion of their pension saving, because some of their fund can be taken as a tax free lump sum. This means that particular portion receives tax relief as a contribution, but is then untaxed in payment.

Additional rate taxpayers do the best out of the tax free lump sum because they receive tax relief on their pension lump sum at 45%, whereas a higher rate taxpayer receives 40% tax relief. The individual with the lowest ‘taxed fund value’ is the one who is a basic rate taxpayer before and after retirement because

<sup>9</sup> PPI calculations. Key to colours in the table

while they do receive some tax advantage from the tax free lump sum, they only receive tax relief of 20%.

The preceding paragraphs highlight the impact that the tax free lump sum has on the 'taxed fund value', the first reform option to be considered is to abolish the tax free lump sum. Under this reform, individuals whose tax bracket reduces at retirement still do well as a result of paying tax in retirement at a lower rate than the relief they receive on the contribution; however those who maintain the same pre and post-retirement marginal tax rate would experience a genuine tax deferral with no real tax advantage. So each of the individuals modelled who maintain their tax rate have the same 'taxed fund value' under the abolished tax free lump sum system.

The remaining EET systems modelled a flat-rate of tax relief at various levels. Under a flat rate system, the pre-retirement marginal tax rate is not important to the 'taxed fund value', because tax relief is calculated based on the flat rate, so everyone gets the same amount of tax relief for a contribution from a £1,000 net contribution. However the post retirement rate of tax does affect the 'taxed fund value'. Those who pay more tax in retirement have a lower 'taxed fund value'.

Table 3 sets out the 'taxed fund value' of 25 year olds under various TEE systems. That is where the contribution does not attract tax relief but the resulting pension is not subject to tax. Under the basic TEE system there is no additional contribution to the pension scheme from the government. However, other options have been suggested which include a matching contribution from the government into the pension scheme of between 10% and 50% of the contribution.

**Table 3: Taxed Fund value of 25 year olds under a TEE system as a result of a £1,000 contribution<sup>10</sup>**

Tax Position (pre/post)	Current	TEE	TEE 10% match	TEE 20% match	TEE 30% match	TEE 40% match	TEE 50% match
Non/Non	£1,680	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Basic/Non	£1,680	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Basic/Basic	£1,428	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Hghr/Basic	£1,904	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Hghr/Hghr	£1,568	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Addnl/Hghr	£1,711	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Addnl/Addnl	£1,619	£1,344	£1,479	£1,613	£1,748	£1,882	£2,016
Key	< 95% of current		Between 95% and 105% of current			> 105% of current	

As can be seen from the table the tax position of the individual is not important to the absolute value outcome. This is because the £1,000 contribution is paid

<sup>10</sup> PPI calculations. Key to colours in the table

after tax, there is no relief based on the tax paid, and there is no post retirement tax, so the individual's post retirement tax rate is unimportant. Also in a TEE system there is no impact of a tax free lump sum, because all the payments from the pension fund are tax free.

Comparing the results in Table 3 with the current system shows that in under the basic TEE system with no matching payments, everyone is worse off than they would be under the current system. This is because of the tax advantageous possibilities of the EET system:

- the possibility of paying tax at a lower rate than the rate at which relief is given, and
- that a portion of the fund may effectively be taken completely tax free,
- under an EET system the tax relief is given at the marginal rate, this is the highest rate paid, however in retirement when the pension is taxed it is taxed at an average rate. So by getting relief while working, the relief is given on the maximum rate of tax they would pay, but in retirement when they pay tax some portion may be tax free, some may be basic, and some may be at higher rate, etc.

This can be seen from the fact that the 'TEE system with no matching contributions' gives the same 'taxed fund value' as the 'EET system after abolishing the tax free lump sum' gives for those who maintain the same pre and post-retirement tax rates.

Providing a matching contribution increases the 'taxed fund value'. In order to achieve the 'taxed fund value' under a TEE system that is equivalent to the 'taxed fund value' of higher/higher taxpayer under the current system, the matching payment would have to be over 10%. To achieve that which an additional/additional taxpayer achieves under the current system, the TEE matching payment would have to be just over 20%. To achieve that which a higher/basic taxpayer achieves under the current system, the TEE matching payment would have to be over 40%.

#### Chapter one: Key points

- The current EET system is beneficial to all individuals. Under the current EET system some of the pension may be received with no tax at all being paid on it. This is because of:
  - the tax free lump sum,
  - and the fact that state pension does not use up all of the Personal Allowance in retirement, so some of the private pension income may not be pensionable.
- EET Tax Systems are beneficial to people who are subject to a tax rate in retirement which is lower than the rate on which they got tax relief.
- A flat rate EET system with a flat rate between 20% and 40% has a redistributive effect, improving the outcomes for basic rate taxpayers and worsening outcomes for higher and additional rate taxpayers.
- A pure TEE system without matching contributions is likely to reduce pension outcomes, because, with tax being paid up front, none of the pension is received tax free, and the tax paid is at the individual's marginal rate in work, rather than an average rate after retirement.
- Giving a matching contribution on a TEE system is similar to a flat rate EET system in the accumulation phase.
- A TEE system with significant matching contributions could increase the outcomes for individuals.

## Chapter two: Impact of tax relief on saving through working life

Chapter one set out the impact of various tax reform options on hypothetical individuals who make a single contribution of £1,000 to a pension scheme. This chapter considers the whole working life impact of the various tax regimes on individuals and the extent to which their outcomes are affected by working patterns.

### *The 'taxed pension value'*

This chapter sets out the impact of changes to the pension tax relief system on individuals' eventual income in retirement, as a result of future contributions made throughout their future working life.

The results are set out in a measure that is similar to the 'taxed fund value' defined in chapter one. It is a single figure that sets out the value of their pension saving that is available to them after retirement in terms of the total value of the net income they might achieve under the potential policy reforms.

The individuals considered are combinations of age, salary level and working life patterns. These are set out in the *Individuals Modelled* section below.

The tax policy reforms considered in this chapter are as before:

- Maintain the status quo (i.e. a EET system with tax paid in retirement at the individuals marginal rate, but with access to 25% of the fund tax free);
- A reformed system similar to the current system but without the option to take any cash as tax free
- A single rate of tax relief at 20%, 25%, 30% and 33%;
- A TEE system with no matching payment;
- A TEE system with matching payments between 10% and 50%.

### **Analysis**

The individual level analysis was performed in the PPI's purpose built individual tax relief model. This model applies a given tax relief scenario to a pattern of contributions. It then models the fund growth, allowing for charges, to produce a fund at retirement. A post retirement tax treatment is then applied to establish the position of the individual under a given tax relief regime.

The current analysis considers a number of individuals, these are characterised by different ages and by different tax positions, pre and post retirement. It is assumed that contributions are made at 9%<sup>11</sup> of net salary into the pension scheme along with whatever amount of tax relief or matching contribution is applicable under the given tax relief policy.

<sup>11</sup> The average total contribution rate to a private sector occupational DC pension scheme in 2013 around 9% of pay. See ONS (2014a).

In addition to the standard assumptions set out in the appendix we have made simplifying assumptions regarding the behavior of individuals:

- Individuals are assumed to retire when they reach their state pension age.
- State pension age is assumed to increase in line with currently projected increases in life expectancy.
- If an annuity is taken it provides a flat income at an annuity rate of 5.5% a year.
- Individuals are assumed to die at age 85.

### Individuals modelled

The results presented in this report are included to give illustrative examples of some of the individuals who were modelled. The complete range of individuals that were modelled include considered are combinations of age, salary level and working life patterns. The results are gender neutral.

These are as follows:

Age in 2015
20
40
60

Salary Levels
£8,000 (low end non-tax payer)
£10,000 (high end non-tax payer)
£15,000 (low end basic rate tax payer)
£40,000 (high end basic rate tax payer)
£60,000 (higher rate tax payer)
£145,000 (high end higher rate tax payer)
£160,000 additional rate tax payer

Working life pattern
Work from current age to SPA (default working life pattern)
Carer for children (takes career-break between ages 30 and 40)
Carer for elder relative (takes career-break between ages 50 and 60)
High flyer (earns an additional 1% p.a. on top of general earnings inflation which, for earners in the higher end of their tax bracket, may lift them into the next tax bracket for part of their working life.)

**Results**

*Presentation of results*

The results are presented in terms of the total income net of tax. This ‘taxed pension value’ measure is similar to the ‘taxed fund value’ presented in chapter one, in that it represents the net of tax value that an individual receives from the pension savings made by them and on their behalf.

The ‘taxed pension value’ is constructed by calculating a fund at retirement under a given scenario for a given individual. The resulting pension cashflows and lump sum taken for the individual are calculated. The amount of tax due on their pension payments is also calculated as appropriate under a given scenario, allowing for their personal allowance and state pension entitlement. The tax is then subtracted from the pension and lump sum payments to give the net income in each year. In order to turn this into a single figure to aid comparisons, each future cashflow is discounted back to 2015 earnings terms which can then be added together to give the total ‘taxed income value’.

The individuals are assumed to take a 25% lump sum, and to then annuitise their fund at a rate of 5.5% a year for a flat rate single life annuity.

There is no assumption about gender, as SPA and annuity values are assumed to be equalised. This leads, under the given assumptions, to identical results for men and women.

*The 20 year-old who annuitises*

Table 4 sets out the ‘taxed pension value’ of individuals who save into a pension scheme under EET tax relief systems, then at retirement annuitise their fund at an annuity rate of 5.5%.

**Table 4: Taxed pension value for 20 year olds earning £15,000 in 2015 who work throughout their future working life under an EET system<sup>12</sup>**

	Current system	Abolish TFLS	Flat rate 20% relief	Flat rate 25% relief	Flat rate 30% relief	Flat rate 33% relief
<b>Full working life</b>	£54,506	£50,576	£54,506	£57,847	£61,665	£64,229
<b>Career-break for kids</b>	£43,653	£40,574	£43,653	£46,270	£49,261	£51,269
<b>Career-break to care</b>	£45,018	£41,832	£45,018	£47,726	£50,821	£52,900
Key	< 95% of current	Between 95% and 105% of current		> 105% of current		

<sup>12</sup> PPI calculations. Key to colours in the table

Table 5 sets out the 'taxed pension value' of 20 year olds who save into a pension scheme under various TEE systems, then at retirement annuitise their fund at an annuity rate of 5.5%. Under TEE systems the contribution does not attract tax relief but the resulting pension is not subject to tax. Under the basic TEE system there is no additional contribution to the pension scheme from the government. However, other options have been suggested which include a matching contribution from the government into the pension scheme of between 10% and 50% of the contribution.

**Table 5: Taxed pension value for 20 year olds earning £15,000 in 2015 who work throughout their future working life under a TEE system<sup>13</sup>**

	Current system	TEE	TEE 10% match	TEE 20% match	TEE 30% match	TEE 40% match	TEE 50% match
Full working life	£54,506	£46,178	£50,795	£55,413	£60,031	£64,649	£69,266
Career-break for kids	£43,653	£36,175	£39,793	£43,410	£47,028	£50,646	£54,263
Career-break to care	£45,018	£37,434	£41,177	£44,921	£48,664	£52,408	£56,151
Key	< 95% of current		Between 95% and 105% of current			> 105% of current	

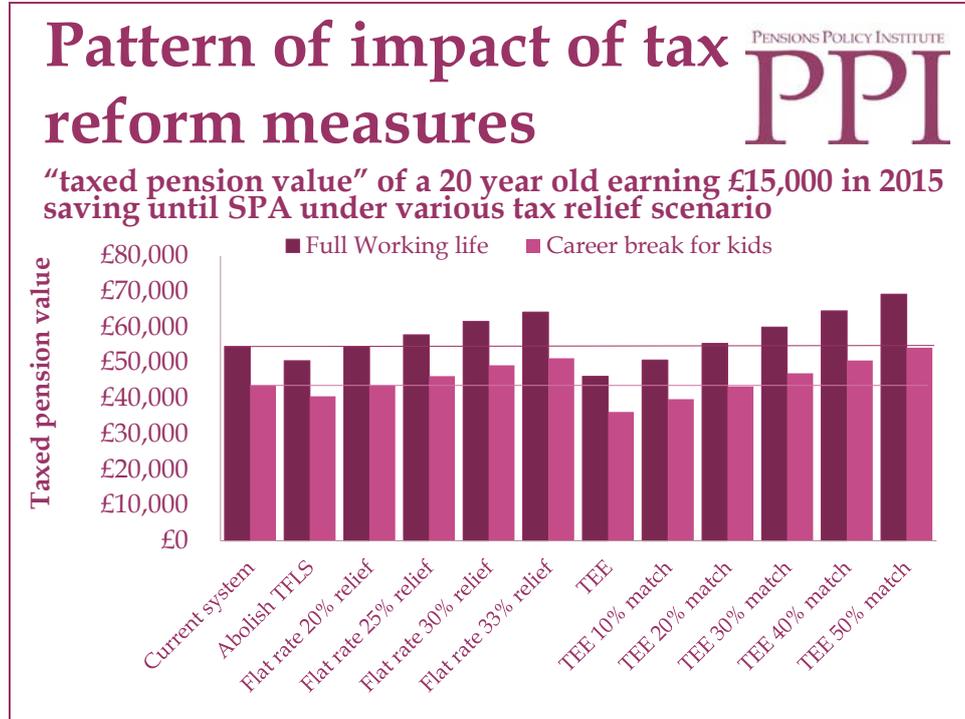
Similarly to when the single contribution was considered, comparing the TEE results in Table 5 with Table 4 shows that under the basic TEE system with no matching payments, the 20 year old is worse off than they would be under the current system. In this case, this is because of the tax advantageous possibilities of the EET system:

- the possibility of paying tax at a lower rate than the rate at which relief is given, and
- the fact that a portion of the fund may effectively be taken completely tax free.

<sup>13</sup> PPI calculations. Key to colours in the table

The pattern of the impact on the 20 year old who annuitises can be seen in Chart 1, which sets out the impact of the various tax relief systems on the 20 year old who works through to retirement, and the 20 year who takes a career-break from age 30 to 40 to care for children.

Chart 1



It can be seen from Chart 1 that the 20 year old carer has a lower ‘taxed pension value’ than the 20 year old who works right through, but the pattern of outcomes is similar.

### A 40 year old saver

Chart 2 shows how the fund value develops through the savings period under various EET tax systems by a 40 year old saver who has a salary of £40,000 in 2015.

Chart 2

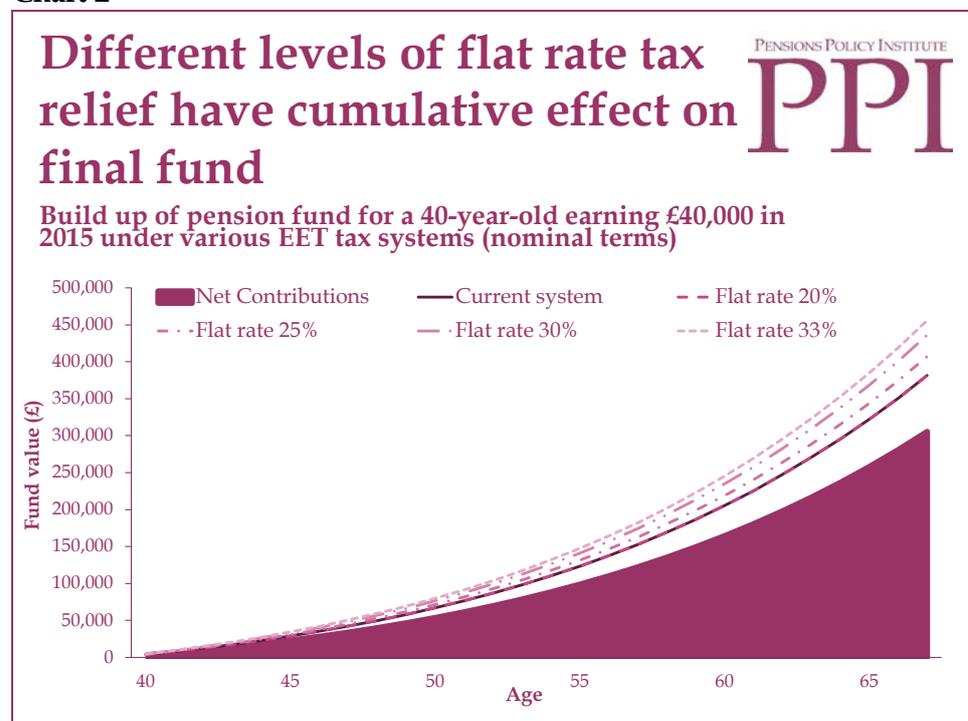


Chart 2 is presented in nominal terms in order to show the cumulative impact of investment return on the tax relief and net contributions.

As may be expected, under a 33% flat rate system, 33% of the final fund results from tax relief, similarly for the other flat rate system. Under the current system, for a basic rate taxpayer 20% of their fund is from tax relief, whereas for a higher rate taxpayer 40% of their final fund is from tax relief.

Under a TEE system with no matching contributions the fund build up would match the net contributions. The TEE system with 50% matching contributions would be almost identical to the 33% EET flat rate system. The other TEE systems would fall in-between.

*The 40 year-old basic rate taxpayer who annuitises*

Table 6 sets out the 'taxed pension value' of individuals who save into a pension scheme under EET tax relief systems, then at retirement annuitise their fund at an annuity rate of 5.5%.

**Table 6: Taxed pension value for 40 year olds earning £40,000 in 2015 who work throughout their future working life under an EET system and annuitise in retirement<sup>14</sup>**

	Current system	Abolish TFLS	Flat rate 20% relief	Flat rate 25% relief	Flat rate 30% relief	Flat rate 33% relief
Full working life	£78,923	£73,358	£78,923	£83,773	£89,316	£93,038
Career-break to care	£53,059	£49,466	£53,059	£56,256	£59,859	£62,262
Higher salary growth	£93,135	£85,488	£76,408	£81,090	£86,442	£90,036
Key	< 95% of current	Between 95% and 105% of current		> 105% of current		

Table 6 shows that the individual who stays as a basic rate taxpayer for their full working life would have a similar experience to the 20 year old basic rate taxpayer.

The individual with higher salary growth loses out under more scenarios than the carer or the person with a full working life and standard earnings growth. This is because the accelerated earnings growth for the higher salary growth rate individual means that she crosses the higher rate tax band during her working life, so she exhibits a pattern closer to that of a higher rate taxpayer in Chapter one, where she would require a higher tax relief rate in order to maintain value. Whereas, the standard full working life individual does not become a higher rate taxpayer, because tax bands are assumed to increase in line with general wage inflation.<sup>15</sup>

<sup>14</sup> PPI calculations. Key to colours in the table

<sup>15</sup> Another quirk of table 6 is that the taxed pension value for the higher salary growth individual is lower than that for the individual with standard earnings growth. This is also due to becoming a higher rate taxpayer. When the higher growth rate individual becomes a higher rate taxpayer, her net contribution falls as a proportion of the gross contribution, (from being 80% of the gross contribution, the net contribution becomes 60% of the gross contribution). So as her salary gradually increases resulting in a relatively small change in the gross contribution, the net contribution falls substantially. So for some period the high flyer is actually making lower net contributions than the basic rate taxpayer. In scenarios where the relief given by the government is a constant factor for everyone, the lower net contribution would translate into a lower contribution, and therefore a lower total pot, and a lower 'taxed pension value'.

Table 7 sets out the 'taxed pension value' of 40 year olds who save into a pension scheme under various TEE systems, then at retirement annuitise their fund at an annuity rate of 5.5%. Under TEE systems the contribution does not attract tax relief but the resulting pension is not subject to tax. Under the basic TEE system there is no additional contribution to the pension scheme from the government. However, other options have been suggested which include a matching contribution from the government into the pension scheme of between 10% and 50% of the contribution.

**Table 7: Taxed pension value for 40 year olds who work throughout their future working life under a TEE system earning £40,000 in 2015 and annuitise in retirement<sup>16</sup>**

	Current system	TEE	TEE 10% match	TEE 20% match	TEE 30% match	TEE 40% match	TEE 50% match
<b>Full working life</b>	£78,923	£67,186	£73,905	£80,623	£87,342	£94,061	£100,779
<b>Career-break to care</b>	£53,059	£43,383	£47,721	£52,059	£56,397	£60,736	£65,074
<b>Higher salary growth</b>	£93,135	£64,864	£71,350	£77,836	£84,323	£90,809	£97,296
Key	< 95% of current	Between 95% and 105% of current			> 105% of current		

Under a straight TEE system, the 'taxed pension value' is lower than the under the current EET system, this is because of the tax free lump sum and because the deferral of tax under an EET system has some elements of reduction of tax. With matched contributions the value to the employee increases, but the matched contribution has to increase to an amount similar to their rate of tax relief, in order for the TEE system to provide an equivalent 'taxed pension value' as the current system.

<sup>16</sup> PPI calculations. Key to colours in the table

Chart 3 sets out the impact of the various tax relief systems on the 40 year old who works through to retirement and the 40 year with higher earnings growth.

Chart 3

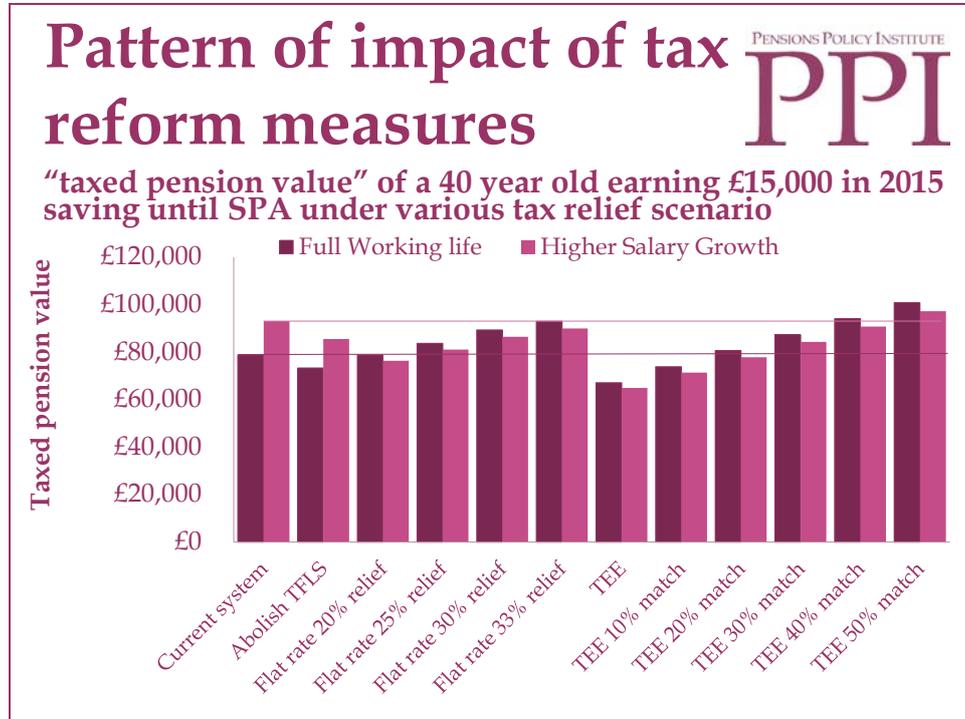


Chart 3 shows that the higher salary growth individual has a higher 'taxed pension value' under the current system than the full working life individual with baseline salary growth. However under the reform scenarios the higher salary growth individual has a lower taxed pension value. They suffer a much larger impact than the standard salary growth individual.

This is due to becoming a higher rate taxpayer. When the higher growth rate individual becomes a higher rate taxpayer, their net contribution falls as a proportion of the gross contribution, (from being 80% of the gross contribution, the net contribution becomes 60% of the gross contribution). So as their salary gradually increases resulting in a relatively small change in the gross contribution, the net contribution falls substantially. So for some period the high flyer is actually making lower net contributions than the basic rate taxpayer. In scenarios where the relief given by the government is a constant factor for everyone, the lower net contribution would translate into a lower contribution, and therefore a lower total pot, and a lower 'taxed pension value'.

If the high salary growth employee kept their gross contributions constant under each tax relief scenario, this would result in maintaining a higher 'taxed pension value'. However this would be at the cost of reduced take-home-pay. This cost to the individual would be missed if we maintained gross contributions constant, using net contributions captures that cost.



*The 40 year-old higher rate taxpayer who annuitises*

Table 10 sets out the ‘taxed pension value’ of individuals who are 40 year old higher rate taxpayers, earning £60,000 a year, who save into a pension scheme under EET tax relief systems, then at retirement annuitise their fund at an annuity rate of 5.5%.

**Table 10: Taxed pension value for 40 year olds earning £60,000 in 2015 who work throughout their future working life under an EET system and annuitise in retirement<sup>17</sup>**

	Current system	Abolish TFLS	Flat rate 20% relief	Flat rate 25% relief	Flat rate 30% relief	Flat rate 33% relief
<b>Full working life</b>	£115,298	£103,981	£88,017	£93,473	£99,709	£103,897
<b>Career-break to care</b>	£76,635	£71,246	£59,020	£62,543	£66,569	£69,274
Key	< 95% of current	Between 95% and 105% of current		> 105% of current		

Table 10 shows that the individual who is a higher rate taxpayer for their full working life would not achieve a ‘taxed pension value’ under any of the flat rate EET systems that is of comparable value under the current system. That is because they currently receive 40% tax relief on contributions, but the flat rate systems modelled only go up to a maximum of 33% tax relief on contributions.

<sup>17</sup> PPI calculations. Key to colours in the table

Table 11 sets out the 'taxed pension value' of 40 year olds who save into a pension scheme under various TEE systems, then at retirement annuitise their fund at an annuity rate of 5.5%. Under TEE systems the contribution does not attract tax relief but the resulting pension is not subject to tax. Under the basic TEE system there is no additional contribution to the pension scheme from the government. However, other options have been suggested which include a matching contribution from the government into the pension scheme of between 10% and 50% of the contribution.

**Table 11: Taxed pension value for 40 year olds who work throughout their future working life under a TEE system earning £60,000 in 2015 and annuitise in retirement<sup>18</sup>**

	Current system	TEE	TEE 10% match	TEE 20% match	TEE 30% match	TEE 40% match	TEE 50% match
<b>Full working life</b>	£115,298	£75,584	£83,143	£90,701	£98,260	£105,818	£113,377
<b>Career-break to care</b>	£76,635	£48,805	£53,686	£58,566	£63,447	£68,328	£73,208
Key	< 95% of current		Between 95% and 105% of current			> 105% of current	

Under a straight TEE system, the 'taxed pension value' is lower than under the current EET system. This is because of the tax free lump sum, and because the deferral of tax under an EET system has some elements of reduction of tax. With matched contributions the value to the employee increases, but the matched contribution has to increase to an amount similar to their rate of tax relief in order for the TEE system to provide an equivalent 'taxed pension value' as the current system.

Even a matching contribution of 50% is not quite enough to match the value under the current system. This is because the 50% matching contribution, is equivalent to the addition to the pension scheme that a 33% EET system would give, which is lower than the 40% tax relief that the higher rate taxpayer is currently receiving. However the TEE system has no tax payable on the pension in payment, but the individual would have been paying basic rate tax in retirement, so the saving is not enough to improve the individual's 'taxed pension value'.

#### **Impact on means tested benefits**

In retirement some people are eligible for means tested benefits such as pension credit (including Guarantee Credit, and savings credit), housing benefit and council tax relief. It is possible that changing the tax regime could impact on a pensioner's access to means tested benefits.

<sup>18</sup> PPI calculations. Key to colours in the table

When the new State Pension is introduced in 2016, savings credit will be unavailable to people reaching state pension age after that date. So the individuals likely to be affected by any changes to the tax treatment of pensions saving are unlikely to be eligible for savings credit. Guarantee Credit will still be in operation however, so there could be people for whom a change to the tax treatment of pension savings could affect their eligibility for Guarantee Credit.

Assessment for eligibility for Guarantee Credit is based on gross income in retirement. The new State Pension is set at a level above the Guarantee Credit level, so in order to be eligible for Guarantee Credit an individual over state pension age would have reduced eligibility to the new State Pension. The level of the Guarantee Credit is below the personal allowance for income tax, so someone eligible for Guarantee Credit is likely to be a non-taxpayer in retirement.

Under an EET system the fund at retirement is likely to be larger than a fund under a TEE system, because tax relief is paid into the fund in addition to net contributions. This leads to a larger gross pension under an EET system than under TEE, which could reduce the eligibility for Guarantee Credit. However the impact on the individual's total income is not quite as simple.

If their total gross pension under both the EET system and TEE system would be lower than the Guarantee Credit level then the individual will receive an income increased up to the Guarantee Credit in both cases, this means that the person would not be affected, but with more of their income coming through Guarantee Credit under the TEE system, the cost to the government of providing Guarantee Credit might increase under a TEE system.

If their total gross income under the TEE system is below the Guarantee Credit level, but the total gross income under the EET system is above the Guarantee Credit level, then under the TEE system the individual would receive some Guarantee Credit, but not under the EET system. This extra income from Guarantee Credit under the TEE system might serve to offset some of the detriment of the TEE compared to the EET indicated in, for example Table 3. However it may lead to a higher spend on Guarantee Credit for the government.

The impact on other means tested benefits may be complicated by a withdrawal rate of less than 1 for 1.

## Chapter two: Key Points

- Individuals who are basic rate taxpayers through their working life tend to do better under a single tier which offers tax relief at greater than 20%.
- Those who have significant periods as higher rate taxpayers, including those who may have started as basic rate taxpayers, do less well under TEE systems or the single tier EET system, requiring a high matching contribution or rate of tax relief rate to maintain the value under the current system.
- Individuals with salary growth that leads them to move from basic rate to higher rate tax, will experience a combination of the basic rate taxpayer and higher rate taxpayer impact. The particular impact on them will depend on the amount of time and level of contributions made while basic and higher rate taxpayers.
- Higher rate taxpayers derive a lot of value in their pension from the 40% tax relief. An EET system with a reduced level of tax relief will leave them worse off. Even a TEE system with a 50% matched contribution could leave them worse off compared with the current system, if they would likely be a basic rate taxpayer in retirement.
- For those who would be eligible for means tested benefits, those benefits may be able to offset some of the loss in a switch from the current system to a TEE system. However that would increase the cost on the government of providing means tested benefits.

## Chapter three: Cost and distribution of reforms to tax relief

This chapter sets out the first year static impact on the cost to the Exchequer of a number of alternative reform options. It goes on to consider how the distribution of tax relief by salary level and by age may change under a flat rate pension tax relief system.

The tax policy reforms considered in this chapter are as before:

- Maintain the status quo (i.e. a EET system with tax paid in retirement at the individuals marginal rate, but with access to 25% of the fund tax free);
- A reformed system similar to the current system but without the option to take any cash as tax free
- A single rate of tax relief at 20%, 25%, 30% and 33%;
- A TEE system with no matching payment;
- A TEE system with matching payments between 10 and 50 percent.

### **Analysis**

Altering a tax relief system may have an effect on the Exchequer immediately and in the future. The immediate impact is as a result of changes to the relief on pension scheme contributions; the future impact is as a result of changes to the tax treatment of the resulting payments from those contributions. This chapter is primarily concerned with the upfront changes to the pensions tax system. However, it should be borne in mind that, for example, moving to a TEE system would start to reduce the tax revenues from pensioner income, up to a point where all pensions accrued under the current EET system have been paid and the TEE pensions would produce no tax revenue.

These estimates only consider the changes in the cost assuming that the pattern and level of contributions stays the same as in the most recent available data from HMRC, that is from the tax year 2012/13. No allowance has been made for the increase in contributions and tax relief that will arise from automatic enrolment in the headline figures, however these are considered in separate estimates.

As one of the aims of moving to a single rate of tax relief for employee pension contributions would be to change behaviour (by encouraging higher levels of pension saving), it is likely that the actual costs could be higher or lower than the estimates provided in this report, if individuals save more or less in response to the change in policy. There is little evidence available which could be used to estimate in detail how individuals might respond to these changes.

The analysis in this report uses the methodology presented in the PPI report *Tax relief for pension saving in the UK*<sup>19</sup>. In particular for the purposes of this report we keep **gross contributions constant for Defined Benefit pension schemes** and we keep **net contributions constant for Defined Contribution pension schemes**. In deciding how to keep contributions constant, the characteristics of the different types of pension schemes were considered.

#### *Defined Benefit pension schemes*

Defined Benefit pension schemes use their contributions to meet and maintain the required funding level. The gross contributions being paid into the scheme are set out in advance. The amount required to finance the scheme does not depend on the tax relief system. Therefore the gross contributions should be held constant for the analysis of Defined Benefit pension schemes.

#### *Defined Contribution pension schemes*

Defined Contribution pension schemes do not have funding targets; there is therefore no need to maintain the level of contributions being paid into the pension scheme so the argument used for Defined Benefit pension schemes does not apply.

#### *Impact on the cost to the Exchequer of various reforms to the tax treatment of pensions*

Table 12 sets out the cost of tax relief on the Exchequer of the various EET tax reforms set out above.

**Table 12: Single year cost to Exchequer of tax relief on pension contributions for EET systems (£billions)**<sup>20</sup>

<b>Tax Treatment scenario</b>	<b>Cost on employer contributions</b>	<b>Cost on employee contributions</b>	<b>Total cost to Exchequer</b>
<b>Current system</b>	21.3	5.9	27.2
<b>Flat rate of tax relief of 20% on contributions</b>	13.0	3.4	16.4
<b>Flat rate of tax relief of 25% on contributions</b>	16.7	4.4	21.1
<b>Flat rate of tax relief of 30% on contributions</b>	20.5	5.5	26.0
<b>Flat rate of tax relief of 33% on contributions</b>	22.9	6.1	29.0

<sup>19</sup>

[http://www.pensionspolicyinstitute.org.uk/uploadeddocuments/20130715\\_Tax\\_Relief\\_for\\_Pension\\_Saving\\_in\\_the\\_UK.pdf](http://www.pensionspolicyinstitute.org.uk/uploadeddocuments/20130715_Tax_Relief_for_Pension_Saving_in_the_UK.pdf)

<sup>20</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

It can be seen from Table 12 that the break-even rate of flat rate tax relief is between 30% and 33%, where the cost to the Exchequer would equal £27.2 billion. A lower rate of tax relief would result in a tax relief saving to the government, whereas a higher rate of tax relief would result in a cost.

Under a TEE system there is no upfront tax relief cost, however it may be helpful to think of any matching payment as being similar to tax relief. Table 13 sets out the cost of the matching payments under TEE systems.

**Table 13: Single year cost to Exchequer of tax relief on pension contributions for TEE systems (£billions) <sup>21</sup>**

<b>Tax Treatment scenario</b>	<b>Cost on employer contributions</b>	<b>Cost on employee contributions</b>	<b>Total cost to Exchequer</b>
<b>Current system</b>	21.3	5.90	27.2
<b>TEE with no matching payment</b>	0.0	0.0	0.0
<b>TEE with 10% matching payment</b>	5.7	1.5	7.2
<b>TEE with 20% matching payment</b>	10.7	2.8	13.5
<b>TEE with 30% matching payment</b>	15.3	4.0	19.3
<b>TEE with 40% matching payment</b>	19.4	5.1	24.5
<b>TEE with 50% matching payment</b>	23.2	6.2	29.4

The TEE systems with 40% or less matching contributions shows an upfront saving to the government. However, moving to a TEE system would start to reduce the tax revenues from pensioner income, up to a point where all pensions accrued under the current EET system have been paid and the TEE pensions would produce no tax revenue.

It could take over 60 years for the final taxable element of a pension to work through the system, resulting in zero tax revenues under a TEE system. However, as the pension tax revenue falls each year, there could come a point, much earlier than 60 years time, where the net cost of matching payments and

<sup>21</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

pension tax revenue is a higher cost to the government than under the current system.

### *Automatic Enrolment*

The analysis above is based on the pension savers present in 2012/13. As a result of automatic enrolment there will be additional savers brought in to pension savings. Government estimates suggest that around 9 million additional people will save as a result of automatic enrolment. These additional savers mean additional costs of pension tax relief.

Analysis of the Wealth and Assets Survey data enabled us to identify the distribution of people who would qualify for automatic enrolment. We have made the assumption that these 9 million people all contribute at the minimum level. That is, the employee contributes 5% of band salary and the employer contributes 3% of band salary.

### *Cost to government under the current system*

Applying the current tax relief system to the resulting distribution of people suggests that the Exchequer cost of tax relief on the employer and employee Automatic Enrolment contributions would be around £3.3 billion in 2012/13 earnings terms.

Table 14 sets out the costs of tax relief on automatically enrolled people under each of the EET reform options.

**Table 14: Single year cost to Exchequer of tax relief on pension contributions for EET systems (£billions) <sup>22</sup>**

<b>Tax Treatment scenario</b>	<b>Cost on employer contributions</b>	<b>Cost on employee contributions</b>	<b>Total cost to Exchequer</b>
<b>Current system</b>	1.2	2.1	3.3
<b>Flat rate of tax relief of 20% on contributions</b>	1.0	1.7	2.7
<b>Flat rate of tax relief of 25% on contributions</b>	1.3	2.2	3.5
<b>Flat rate of tax relief of 30% on contributions</b>	1.7	2.8	4.5
<b>Flat rate of tax relief of 33% on contributions</b>	2.0	3.3	5.2

Under the current system of tax relief, automatically enrolled employees might cost the Exchequer £3.3bn in tax relief. Under a flat rate system the break even

<sup>22</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

rate of tax relief on automatically enrolled individuals could be a rate of tax relief of just under 25%. This is lower than the break even rate for those who are currently saving in a pension scheme. This is because the automatically enrolled individuals are more likely to be basic rate taxpayers.

Under a TEE system there is no upfront tax relief cost, however it may be helpful to think of any matching payment as being similar to tax relief. Table 15 sets out the costs automatically enrolled people under each of the TEE systems.

**Table 15: Single year cost to Exchequer of tax relief on pension contributions for TEE systems (£billions) <sup>23</sup>**

<b>Tax Treatment scenario</b>	<b>Cost on employer contributions</b>	<b>Cost on employee contributions</b>	<b>Total cost to Exchequer</b>
<b>Current system</b>	1.2	2.1	3.3
<b>TEE with no matching payment</b>	0.0	0.0	0.0
<b>TEE with 10% matching payment</b>	0.4	0.7	1.1
<b>TEE with 20% matching payment</b>	0.8	1.3	2.1
<b>TEE with 30% matching payment</b>	1.2	2.0	3.2
<b>TEE with 40% matching payment</b>	1.6	2.7	4.2
<b>TEE with 50% matching payment</b>	2.0	3.3	5.3

#### *Broader distributional aspects*

A further part of the analysis is to consider the distribution of the tax relief on contributions by individual's tax band and by age. The proportional distribution depends on whether the tax relief (or matching payment) is based on the employee's marginal tax rate or on a flat rate. However the distribution does not change for different levels of flat rate. This is because a higher flat rate gives everyone the same proportional increase in their tax relief and therefore does not affect the distribution.

<sup>23</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

**Table 16: Distribution of tax relief on contributions and matching payments by tax band (2012/13)**<sup>24</sup>

Marginal tax band	Current EET marginal tax relief	Flat rate relief or matching payment	TEE with no matching payment	Proportion of members
Basic rate	29%	49%	0%	70%
Higher rate	56%	42%	0%	27%
Additional rate	15%	9%	0%	3%

Table 16 sets out the distribution of tax relief on contributions by tax band. Introducing a flat rate of tax relief redistributes the tax relief resources toward basic rate taxpayers. It reflects the distribution of net contributions to pension schemes. A TEE system with no matching contributions gives no tax relief, and therefore there is no distribution of tax relief. A TEE system with matching contribution would follow the same distribution as the EET with flat rate contribution.

Table 17 shows the distribution of tax relief on employee contributions by earnings band and how it changes under a flat rate or a matching payment system.

**Table 17: Distribution of tax relief on contributions and matching payments by salary band (2012/13)**<sup>25</sup>

Marginal tax band	Current EET with marginal tax relief	Flat rate relief or matching payment
Less than £20k	6%	10%
£20k to £30k	10%	17%
£30k to £50k	29%	35%
£50k to £70k	19%	14%
£70k to £100k	12%	9%
£100k to £150k	9%	7%
£150k to £200k	5%	3%
200k to 300k	4%	2%
£300k to £500k	3%	2%
Over £500k	2%	1%

<sup>24</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

<sup>25</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

The data from Table 17 is illustrated in Chart 4 which show the shift in the weight of tax relief contributions from high earners to lower earners under a flat rate or a matching contributions. The higher earners see their share of the tax relief drop under a flat rate system, while lower earners see an increased share of tax relief under a flat rate. The flat rate system reflects the distribution of the amount of contributions that are being made.

Chart 4<sup>26</sup>

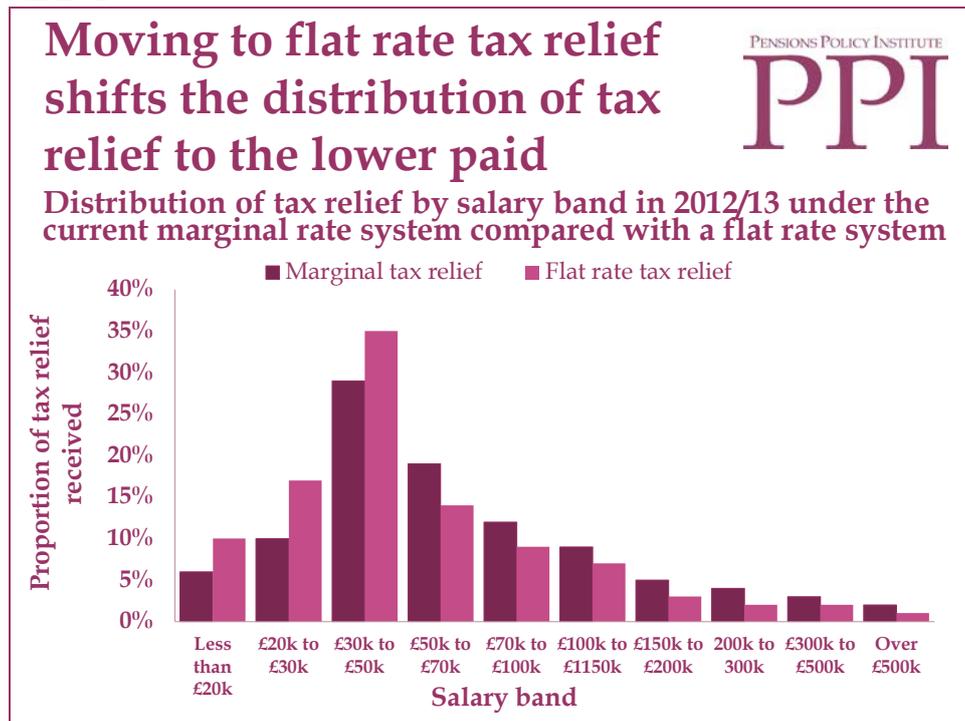


Table 18 sets out the distribution of tax relief on contributions by age group. The distribution of tax relief by age group shows a slight redistribution from middle aged people toward younger people and older people. This makes sense because these are the groups that are likely to have proportionally more basic rate taxpayers. And the groups of people between 35 and 54 have proportionally more higher rate taxpayers than the other age bands.

Table 18: Distribution of tax relief by age group<sup>27</sup>

Age Group	Current EET with marginal tax relief	Flat rate relief or matching payment	TEE with no matching payment
16-24	0.9%	1.2%	0%
25-34	12.1%	13.3%	0%
35-44	31.8%	30.5%	0%
44-54	36.2%	35.5%	0%
55-64	19.0%	19.5%	0%

<sup>26</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b)

<sup>27</sup> PPI calculations. Based on data from HMRC (2015a) and HMRC (2015b) and ONS (2014b)

However, the relatively small change in the distribution suggests that each age band has a diverse range of taxpayers within it.

#### Chapter three: Key Points

- Adjusting the tax relief on contributions changes the cost to the government of the tax relief.
- An EET system with a flat rate of slightly over 30% might be implemented for around the same initial cost of tax relief as the current system.
- A pure TEE system will lead to an initial reduction in cost as the tax relief on contributions falls to zero, however there will be a longer term cost when the resulting pensions are paid out with no tax payable.
- A TEE system with matching contributions introduces upfront costs to the Exchequer in addition to the loss of future tax revenue on pension payments.
- The distribution of tax relief under a flat rate system reflects the net contribution to pension schemes.
- The age distribution of tax relief is relatively unaffected by introducing a flat rate pension, however there is a slight redistribution from middle ages to younger, and to older pension savers.

## Chapter four: Lifetime Allowance and Annual Allowance equivalence

This chapter considers making an adjustment to the system of pension tax free allowances, the Annual Allowance and the Lifetime Allowance. This chapter considers the concept of equivalence between using allowances for Defined Contribution pension schemes and for Defined Benefit pension schemes. The ABI asked the PPI to construct a Lifetime Allowance in terms of a Defined Benefit Pension scheme that is consistent with an Annual Allowance in a DC pension scheme.

Changing the level of the allowances could be a key lever for the government to control the cost/distribution of tax relief. The chapter does not contain any calculations regarding the cost/savings to the Exchequer of making changes to the allowances. Such calculations are heavily dependent on being able to accurately map the distribution of contributions at a level to which adequate data is scarce in the public domain. The use of currently unavailable data from HMRC on the distribution of contributions sizes into DC pension schemes could allow the government to make estimates of the impact.

### **Background**

The allowances consist of an Annual Allowance, which limits the growth of pension saving each year, and a Lifetime Allowance, which limits the total value of a pension at retirement. Under a DC pension system these limits are reasonably simple to understand, relating simply to contributions into the scheme, and the final fund value of the scheme. But under a DB pension scheme it is a slightly more complicated calculation, and more difficult to conceptually understand the reasoning.

The reform option considered here is that DC schemes would be subject to the Annual Allowance but not the Lifetime Allowance, and that DB schemes would be subject to the Lifetime Allowance but not the Annual Allowance. The reasoning behind this is that DB schemes and DC schemes are each subject to a single element of the Allowance system, the one that is more suitable for that type of scheme. It would be desirable for the DB and DC elements of the system to be consistent.

### **Analysing Consistency**

The starting point for the analysis is to set out the definition of consistency employed and the assumptions used in the calculations.

The DC Annual Allowance would be set at what is considered an appropriate level. Then a notional fund is calculated, where each contribution is at the level of the Annual Allowance. The total accumulated value of this notional fund is then set to be the equivalent Lifetime Allowance for a DB pension.

This requires some assumptions for the fund growth, and the DB pension scheme which are set out in the appendix.

### Analysis

Setting the lifetime allowance as an accumulation of a series of payments at the level of the annual allowance raises the question as to how long we accumulate for. If we assume that an equivalent fund is built up over a longer period then this increases the allowance for DB scheme members compared to DC members.

The results in this chapter set out equivalents calculated assuming a 30 year accumulation period as a baseline, with a 20 and 40 year accumulation to show sensitivity. In each case the accrual period used to calculate the implied salary of a DB scheme member is set to be the same as the assumed accumulation period.

Table 19 sets out the amount of the Lifetime Allowance (LTA) that might be equivalent to a DC Annual Allowance if the accumulation period was set to be 30 years.

**Table 19: Implied equivalent DB and DC allowances assuming 30 years of service (2015 earnings terms)** <sup>28</sup>

DC Annual Allowance	£20,000	£30,000	£40,000	£50,000
LTA fund	£667k	£1.0m	£1.3m	£1.7m
DB Equivalent Pension	£36,000	£54,000	£72,000	£90,000
Implied salary	£72,000	£108,000	£144,000	£180,000

Table 19 shows the final salary that a DB saver in a 60ths scheme would have to achieve in order for the equivalent Lifetime Allowance to bite, if they were a member of the DB pension scheme for 30 years.

Table 20 sets out the amount of the Lifetime Allowance that might be equivalent to a DC Annual Allowance if the accumulation period was set to be 20 years.

**Table 20: Implied equivalent DB and DC allowances assuming 20 years of service (2015 earnings terms)** <sup>29</sup>

DC Annual Allowance	£20,000	£30,000	£40,000	£50,000
LTA fund	£430k	£644k	£859k	£1.1m
DB Equivalent Pension	£23,000	£35,000	£46,000	£58,000
Implied salary	£70,000	£104,000	£139,000	£174,000

Table 20 shows the final salary that a DB saver in a 60ths scheme would have to achieve in order to be caught by the equivalent Lifetime Allowance, if they were a member of the DB pension scheme for 20 years.

<sup>28</sup> PPI calculations.

<sup>29</sup> PPI calculations.

It may be seen that the amount of required salary does not change a great deal from that in Table 19. For example, for a £30,000 DC Annual Allowance, the equivalent Lifetime Allowance would require a final salary of £108,000 if a 30 year accumulation period is used, compared with £104,000 if a 20 year accumulation period is used. However, if a system was implemented using a 20 year accumulation period to set an equivalent Lifetime Allowance to a £20,000 Annual Allowance, then an individual that retired from a DB scheme with 40 years' service would breach the Lifetime Allowance if their salary was over £35,000.

Table 21 sets out the amount of the Lifetime Allowance that might be equivalent to a DC Annual Allowance if the accumulation period was set to be 40 years.

**Table 21: Implied equivalent DB and DC allowances assuming 40 years of service (2015 earnings terms)<sup>30</sup>**

<b>DC Annual Allowance</b>	<b>£20,000</b>	<b>£30,000</b>	<b>£40,000</b>	<b>£50,000</b>
<b>LTA fund</b>	£921k	£1.4m	£1.8m	£2.3m
<b>DB Equivalent Pension</b>	£50,000	£75,000	£100,000	£124,000
<b>Implied salary</b>	£75,000	£112,000	£149,000	£187,000

Chapter four: Key points

- It may be possible to consider allowances in terms of equivalence and thereby apply different types of allowances to different forms of pension savings.
- Changes to allowances which are designed to hit high earners can have impacts on more modest earners if they have been long-term members of DB pension schemes.

<sup>30</sup> PPI calculations.

## Appendix: Assumptions and methodology

### General assumptions

This project includes original modelling undertaken by the PPI. The modelling for each part of the analysis is described in devoted sections; this section sets out the general principles and assumptions.

#### *Assumptions*

##### Financial Assumptions

Unless otherwise stated, the modelling assumes:

- Long-term increases in the Retail Prices Index (RPI) of 3%.
- Long-term increases in the Consumer Prices Index (CPI) of 2%.
- Future annual earnings growth of 4.5%, in nominal terms.
- Expected investment returns of 6% a year, broadly representing a mixed equity/bond fund.
- Annual management charge on a pension fund of 0.75% of the funds under management.

These assumptions are the result of consultation between the PPI and the PPI's modelling review board. The modelling review board consists of a number of experts in the field of modelling. For the most part, wherever possible assumptions follow the assumptions set out by the Office for Budget Responsibility in their Fiscal Sustainability Report.

In addition to the financial assumptions above we have made a number of simplifying assumptions regarding the behavior of individuals:

- Individuals are assumed to retire when they reach their state pension age.
- Individuals are assumed to maintain their current saving behavior until they retire – i.e. remain in the same jobs, paying the same contribution levels while in employment.
- Employers do not make changes to their pension provision as a result of changes in the tax relief system.

## Individual calculations

The project makes use of stylised case study calculations of the impact of tax relief and potential reforms on individuals. These calculations are used to illustrate the impact of a number of difference tax relief upon individuals saving in pension schemes

### **The difference in tax relief treatment between pension saving and other savings vehicles**

Modelling of the way that tax relief affects outcomes from various savings vehicles was done using consistent assumptions and methodology for each type of savings vehicle. The tax relief systems considered are:

- An EET system where tax relief is provided on scheme contributions at the employee's marginal rate (i.e. maintaining the status quo);
- A reformed system similar to the current system but with changes to the annual and lifetime allowances and tax free cash;
- A single rate of tax relief at 20%, 25%, 30% and 33%;
- A TEE system with no matching payment;
- A TEE system with matching payments between 10 and 50 percent.

The calculation assumes a single contribution, of the equivalent of £1,000 of net income for an individual. The calculation does not factor in the impact of the Annual Allowance. This is then projected forward with investment returns to retirement age at which point the proceeds from the investment are considered.

The initial contribution is the equivalent of £1,000 of net income. For the ISA and Standard Savings account this means a straightforward investment of £1,000, however, for the pension scheme which gives tax relief on contributions, the equivalent of £1,000 of net income is an investment of:

$$\text{Pension scheme contribution} = \frac{\text{£1,000}}{(1 - \text{tax relief rate})}$$

For example, where tax relief is offered at 20%, the contribution would be  $\text{£1,000}/(1 - 0.2) = \text{£1250}$ .

The investment is assumed to grow in line with the PPI's standard assumption of 6%, with an annual management charge of 0.75%p.a. applied.

$$\begin{aligned} \text{Fund at end of year } t & \\ &= \text{Fund at start of year } t \times [1 + 6\% \times (1 - \text{tax on return})] \\ &\quad \times (1 - 0.75\%) \end{aligned}$$

At retirement, when the fund is assumed to have matured for the sake of the comparison, the post-tax capitalised value of the proceeds of each of the funds are compared. Under the EET scenarios it is assumed that the maximum allowed

25% of the fund is taken as a tax free lump sum. The remaining 75% is assumed to be subject to the assumed post retirement marginal tax rate.

### **Working life patterns**

A number of individuals will be modelled representing stylised work patterns, but based on realistic working life scenarios. These include:

- Working up to state pension age;
- Taking a career-break between ages 30 and 40 to look after children;
- Taking a career-break from 50 to 60 to care for older relatives;
- Receiving pay rises of 1% higher than general wage inflation. This will push some of the individuals into higher tax bands for part of their working life.

After a career-break individuals are assumed to return to their pre-career-break working patterns.

### **Retirement scenarios**

The individuals will be assumed to stop saving when they reach their state pension age. At that point they will decide what to do with their pension fund. The modelled scenario is that they purchase an annuity at an annuity rate of 5.5% of the fund a year

As set out in the tax reforms being considered it, there are reform scenarios where the tax free cash taken at retirement may be adjusted. Particular adjustments include:

- Maintaining the existing 25% tax free lump sum;
- Abolish the tax free lump sum.

## **Distributional calculations**

The project also considers impact on the level and distribution of tax relief to pension savers following potential reforms to the tax relief available on pension contributions. This section sets out the calculation methodology and assumptions used in producing these figures.

The following possible reforms to tax relief are to be modelled:

- An EET system where tax relief is provided on scheme contributions at the employee's marginal rate (i.e. maintaining the status quo);
- A reformed system similar to the current system but with changes to the annual and lifetime allowances and tax free cash;
- A single rate of tax relief at 20%, 25%, 30% and 33%;
- A TEE system with no matching payment;
- A TEE system with matching payments between 10 and 50 percent.

### **Initial data**

The HMRC and ONS publish information regarding the contributions to pension schemes in their Table 3.8. This sets out the employee contributions which are subject to tax relief by the level of earnings. The level of earnings was used to calculate the marginal tax rate, which in turn was used to calculate the implied relief available on the employee contributions.

The calculations performed on Table 3.8 provided a distribution of tax relief on employee contributions by earnings band. In order to consider the impact of reforms on the total amount of tax relief on contributions, the employee figures were pro-rated up to the amount of the total tax relief on pension contributions set out in PEN 6, while keeping the same earnings distribution as had been established in the analysis of Table 3.8. This allows us a calculation of the distribution of net contributions to pension schemes and the associated tax relief awarded on those calculations by salary level.

### **Modelling Distributional impact of reforms to tax relief on contributions**

The calculation of tax relief is possible when given a particular amount of contribution and an applicable tax relief rate, for example, in the case where Net contributions are held constant.

$$\text{Tax relief} = \text{tax relief rate} \times \frac{\text{Net Contribution}}{(1 - \text{tax relief rate})}$$

Therefore, taking the distribution of net contributions by salary level it is possible to overlay a tax relief scenario to calculate the projected tax relief at each salary level and thereby create a revised distribution of tax relief.

In the case where gross contribution is held constant the calculation of the post reform tax relief is:

$$\text{Tax relief} = \text{tax relief rate} \times \text{Gross Contribution}$$

Summing the tax relief over the entire distribution allows calculation of changes in the total level of tax relief on contributions.

### **Gross and net contributions**

The benchmark analysis in this project assumes that contributions to the pension schemes are initially unaffected by the change in the rate of tax relief. However, the level of contribution that should be held constant can be estimated in more than one way. The total pension scheme contribution, or gross contribution, is made up of the net contribution plus tax relief. The complication arises as to whether, when the tax relief is adjusted, it should be the gross contribution or the net contribution that is assumed to remain constant.

#### *Holding the gross contribution constant*

If the gross contribution is held constant then it is assumed that the same amount of money flows into pension schemes, it is just a question as to how much of that money is tax relief and how much is net contributions.

For example, if a gross contribution of £100 was made to a pension scheme by a basic rate (20%) taxpayer, then, under the current tax relief system, this consists of £80 net contribution and £20 tax relief.

$$\text{Gross contribution} = \text{Net contribution} + \text{Tax relief}$$

$$£100 = £80 + £20$$

If the tax relief is changed to be 30%, then keeping the gross contribution at £100 would lead to a higher tax relief figure of £30 and would require a lower net contribution of £70 to attain.

$$\text{Gross contribution} = \text{Net contribution} + \text{Tax relief}$$

$$£100 = £70 + £30$$

In the case of a higher rate taxpayer, a reduction in the amount of tax relief would increase the amount of net contribution required in order to maintain a constant level of gross contributions.

#### *Holding the net contribution constant*

If the net contribution is held constant then a change in the rate of tax relief will affect the gross contribution. Applying a more favourable rate of tax relief will increase the gross contribution for a given level of net contributions.

For example, if we consider the basic rate taxpayer from the previous example, who makes a net contribution of £80, and receives £20 tax relief, leading to a £100

gross contribution. If we keep the net contribution constant, then a change in the tax relief to 30% would lead to £34 tax relief and a total contribution of £114.

$$\text{Gross contribution} = \text{Net contribution} + \text{Tax relief}$$

$$£114 = £80 + £34$$

In the case of a higher rate taxpayer, a reduction in the amount of tax relief, e.g. from 40% to 30%, would reduce the amount of gross contribution achieved from a constant level of net contributions.

### **Whether to use gross contributions or net contributions as benchmark**

The benchmark results in the analysis in this project are based on keeping the contributions constant, but there is a question as to which contributions should be assumed to remain constant. As the discussion above has shown, the impact on tax relief differs depending on whether gross contributions or net contributions are kept constant.

For the purposes of this project we keep **gross contributions constant for Defined Benefit pension schemes** and we keep **net contributions constant for Defined Contribution pension schemes**. In deciding how to keep contributions constant, the characteristics of the different types of pension schemes were considered.

#### *Defined Benefit pension schemes*

Defined Benefit pension schemes use their contributions to meet and maintain the required funding level. The gross contributions being paid into the scheme are set out in advance. The amount required to finance the scheme does not depend on the tax relief system. Therefore the gross contributions should be held constant for the analysis of Defined Benefit pension schemes.

#### *Defined Contribution pension schemes*

Defined Contribution pension schemes do not have funding targets, there is therefore no need to maintain the level of contributions being paid into the pension scheme, so the argument used for Defined Benefit pension schemes does not apply.

Instead it was assumed that employees would be interested in maintaining the same level of take-home pay after making pension contributions into a Defined Contribution pension scheme. This means keeping the same level of net contributions, and allowing the impact of a change in the tax relief offered to fall on the gross contribution to the scheme.

## **Lifetime and Annual Allowance calculations**

### **Assumptions**

- Expected investment returns of 6% a year, broadly representing a mixed equity/bond fund.
- Annual management charge on a pension fund of 0.75% of the funds under management.
- The Annual Allowance increases in line with growth in average earnings
- Growth in average earnings is at 4.5% a year in nominal terms
- DB conversion factor of 20 at retirement.
- DB accrual rate of 1/60th of final salary for every year of service
- DB tax free cash commutation factor of £14 for every £1 of pension given up at retirement.

### **Results are expressed in current earnings terms**

### **Methodology**

The analysis uses a given Annual Allowance figure to calculate an equivalent Lifetime Allowance figure. This is calculated by creating a fund into which an amount equal to the Annual Allowance is paid each year, attracting investment returns at the assumed rate, and subject to management charges. The Annual Allowance is assumed to increase each year in line with growth in average earnings.

At the assumed retirement date there is a projected accumulated fund. This is converted into current earnings terms and is set as the equivalent Lifetime Allowance.

The implied amount of Defined Benefit pension is then calculated by applying DB conversion factor to the calculated Lifetime Allowance, while allowing for the fact that people could commute part of their pension into a lump sum.

Having calculated the amount of DB pension, the salary level required to achieve that pension amount can be calculated by stripping out the accrual rate and dividing by the assumed period of accrual.

## Acknowledgements and Contact Details

The Pensions Policy Institute is grateful for input from many people in support of this paper, including:

Chris Curry	Sarah Luheshi	Maritha Lightbourne
Tiffany Tsang	Jon Allen	Daniel Sadler

Editing decisions remained with the author who takes responsibility for any remaining errors or omissions.

The Pensions Policy Institute is an educational charity promoting the study of retirement income provision through research, analysis, discussion and publication. The PPI takes an independent view across the entire pensions system.

The PPI is funded by donations, grants and benefits-in-kind from a range of organisations, as well as being commissioned for research projects. To learn more about the PPI, see: [www.pensionspolicyinstitute.org.uk](http://www.pensionspolicyinstitute.org.uk)

© Pensions Policy Institute, 2015

Contact:	Pensions Policy Institute
Chris Curry, Director	King's College
Telephone: 020 7848 3744	26 Drury Lane
Email: <a href="mailto:info@pensionspolicyinstitute.org.uk">info@pensionspolicyinstitute.org.uk</a>	London WC2B 5RL

**The PPI is grateful for the continuing support of its Platinum & Gold members:**

Platinum

JLT	J.P. Morgan Asset Management
Just Retirement	Prudential UK & Europe
The Pensions Regulator	Columbia Threadneedle Investments

Gold

AXA Investment Managers	Alliance Bernstein (AB)
BlackRock	Capita Employee Benefits
DWP	Hymans Robertson
NEST	RPMI
Standard Life Group	The People's Pension

A full list of supporting members is on the PPI's website.

## References

Her Majesty's Revenue and Customs (HMRC) (2015a) PEN6 Cost of Registered Pension Scheme Tax Relief

HMRC (2015b) Table 3.8 Deductions and reliefs, 2012-13

Office for National Statistics (ONS) (2014a) *Pension Trends - Chapter 8: Pension Contributions, 2014 Edition*

Office for National Statistics. Social Survey Division. (2014b). *Wealth and Assets Survey, Waves 1-3, 2006-2012. [data collection]. 3rd Edition. UK Data Service. SN: 7215*

Pensions Policy Institute (PPI) (2015) *The Pensions Primer: a guide to the UK pensions system*

Crown copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland.

Published by  
PENSIONS POLICY INSTITUTE

**PPI**

[www.pensionspolicyinstitute.org.uk](http://www.pensionspolicyinstitute.org.uk)  
ISBN 978-1-906284-35-0