

The Fiscal
Landscape:
Understanding
contributions and
benefits

help

reflexive
improvement
global actions
citizens

welfare
change
agency

choice

relationships
aspirations
value experiences

goals
SCOPING THE
CHALLENGES FOR

2020

resources
education
model
equality
opportunity

issues
ideas
freedom
motivations served

PUBLIC
SERVICES
operations lead

Prepared by:

Volterra

The Fiscal Landscape: Understanding contributions and benefits

Prepared by Volterra Consulting

Volterra

About the 2020 Public Services Trust

The 2020 Public Services Trust is a registered charity (no. 1124095), based at the RSA. It is not aligned with any political party and operates with independence and impartiality. The Trust exists to stimulate deeper understanding of the challenges facing public services in the medium term. Through research, inquiry and discourse, it aims to develop rigorous and practical solutions, capable of sustaining support across all political parties.

In December 2008, the Trust launched a major new **Commission on 2020 Public Services**, chaired by Sir Andrew Foster, to recommend the characteristics of a new public services settlement appropriate for the future needs and aspirations of citizens, and the best practical arrangements for its implementation.

For more information on the Trust and its Commission, please visit www.2020pst.org

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Foreword to the Scoping the Challenges series

Effective public services are vital to our individual and collective wellbeing and prosperity, as well as the foundation for a fair and cohesive society. They enable us to cope with the uncertainties of life, develop our potential, and extend our opportunities. They act as a practical expression of our shared values and aspirations. They work to correct underlying inequalities, and to advance other shared social, economic or environmental objectives.

The Commission on 2020 Public Services is a major inquiry into how our public services can respond to the significant challenges of the next decade. It is chaired by Sir Andrew Foster (Deputy Chairman of Royal Bank of Canada, formerly Chief Executive of the Audit Commission and Deputy Chief Executive of the NHS) and includes 19 other leading public policy thinkers from a range of specialisms and backgrounds.

The role of the Commission on 2020 Public Services

Long term social trends and the inherent difficulties of delivering a largely centralised welfare system have challenged the viability of our existing welfare model. At a time when economic hardship and rising unemployment puts additional strain on public services, and the short to medium term outlook for the UK's public finances looks bleak, the need for a comprehensive debate on our public services is all the more pressing.

The Commission on 2020 Public Services exists to transform the nature of the debate on public services. We intend to do this in three main ways:

- 1 By broadening the national conversation.** The debate about public services often focuses narrowly on delivery and piecemeal adjustments to the existing model. The Commission will direct the conversation toward the purpose of public services and the underlying nature of the relationship between the

citizen and the state. Everyone has an interest in this debate; as citizens, as users of public services, and as taxpayers. Any successful vision for change must make full use of the experience and know-how of citizens, including those engaged in frontline delivery.

- 2 **By bringing new structure to the debate.** Where existing debates on public services sometimes lack coherence, the Commission gives the debate shape – bringing new insights from academic literature and citizen engagement to articulate the new opportunities, constraints and trade-offs for policy makers in the future.
- 3 **By liberating thinking about solutions.** Our national conversation on public services must wrestle with the content and meaning of social citizenship appropriate to our times. This means thinking about the obligations, entitlements, rules and expectations that define the relationship between citizen and the state. More than ever, in these tough economic times we need to work together and think beyond traditional parameters to improve our individual and collective wellbeing.

Scoping the Challenges

The *Scoping the Challenges* series is the first step in the launch of a new national conversation. It seeks to survey the landscape of issues and questions we need to pose to hold a coherent and comprehensive debate on the future of public services.

Scoping the Challenges consists of three research reports:

- **A Brief History of Public Service Reform** – an analysis of UK welfare and public services from before 1945 to the present day. It explores the evolution of the system and when, why and how change took place. It seeks to answer how we got here, and identify the prospects for radical reform.
- **Drivers for Change: Citizen Demand in 2020** – This project examines over 30 social, cultural and technology trends that will have a bearing on the demand for public services and explores three scenarios which illustrate life as it might be in 2020.
- **The Fiscal Landscape** – There is now widespread political consensus that cuts will have to be made to public spending. The question remains as to how this will effect the provision of public services and how this burden should be shared across society.

These papers, along with other future research, will all feed into the Commission's final report due for publication in summer 2010.

The 2020 Public Services Trust invites you to engage in our national conversation. For more information on how to get involved, please see www.2020publicservicestrust.org.



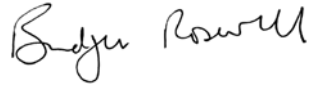
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Commissioner Leads for the Scoping the Challenges series

Commentary

By Charlotte Alldritt, 2020 Public Services Trust

Context

Fiscal rebalance: a case of timing and distribution

The issue of public spending dominates the political arena. In the run up to any General Election, perhaps this is to be expected. But this time it's different. The scale of the fiscal rebalancing act required to reduce the UK deficit and rein in national debt is unprecedented since 1945. In contrast with most election years - and with barely a sweetening pill in sight - the new political game in town is a competition over spending cuts. We are told by Party leaders that we face an 'age of austerity,' where 'savage cuts' and 'tough choices' must be made.

The case for fiscal redress is clear. This financial year alone the country is likely to run a deficit of 13%, borrow £175 billion and push debt to over 60% of GDP.¹ Much of the more nuanced economic debate is focused not on whether, but when and how we should start to balance the books. The Government's plans suggest cutting the deficit by 6.4% of GDP over 8 years. Vince Cable MP, Treasury Spokesman for the Liberal Democrats, has called for a cut of 8% of GDP over 5 years.² The Conservative Party has not stated an explicit timetable, but has suggested that tightening should be more aggressive than the Government currently plans.³ On all sides of the political spectrum, timing is deemed critical. Too fast, too soon and we might jeopardise the recovery of the economy.⁴ But if we delay too long, the markets might lose confidence in the UK's ability to repay its mounting debt, and (at best) it

1 HM Treasury, Budget 2009

2 Cable, V. 'Tackling the fiscal crisis: A recovery plan for the UK,' Reform (September 2009)

3 See Osborne, G, 'The Conservative Strategy for the recovery' (September 2009, p5) www.conservatives.com/News/Speeches/2009/09/George_Osborne_The_Conservative_Strategy_for_the_recovery.aspx, and Cameron, D. 'Debt reduction more important than tax cuts' (March 2009) www.guardian.co.uk/politics/2009/mar/19/david-cameron-national-debt.

4 For example, see comments by Will Hutton, the Observer, for more along this line of argument: www.guardian.co.uk/commentisfree/2009/sep/13/budget-national-debt-will-hutton

becomes all the more costly to service.⁵ After more than a decade of rising public spending,⁶ people are going to feel the pinch of stringent cuts and/or tax increases. One question is the extent to which this pain can be minimized. But where it cannot be avoided, the political question remains as to how the pain should be distributed.

Fiscal rebalance: coping with the long term demand challenges

The immediate fiscal challenge is a daunting prospect. However, things are set to be worse still. As described further in 2020 PST's second paper in the *Scoping the Challenges* series – 'Drivers for Change: Citizen demand in 2020' – the long term problems facing the UK include:

- How to respond to an **ageing society**: the number of people over 85 is expected to grow by 50% by 2020, putting pressure on pensions, health, social care and other services.⁷
- **Reducing carbon emissions** by 29% by 2020 and all greenhouse gases by 80% over the next 40 years.⁸
- **Combating obesity** and the rise of other **chronic health conditions**: if current trends persist, at least one-third of adults, one fifth of boys and one-third of girls will be obese by 2020.⁹
- Reversing **social polarization**: to meet the Government's target of abolishing child poverty by 2020 has been estimated to cost up to £30 billion.¹⁰
- How to remain **competitive in the global economy**: currently the UK is projected to rank 23rd and 21st in the world in terms of low and intermediate level skills by 2020. While expected to reach 10th position in terms of high skills, to be truly competitive we might need to be in the top 8 performing countries at every skill level.¹¹

5 For an account of the impact of the structural deficit (now understood to be 5% higher than thought before the crisis), see Chote, R et al. 'Britain's Fiscal Squeeze: the Choices Ahead,' Institute for Fiscal Studies (2009). For more general comments along this line of argument see Martin Wolf, Editor for the Financial Times. For example, Wolf, M. 'End Britain's phoney fiscal war' (June 4 2009): blogs.ft.com/economistsforum/2009/06/end-britain%E2%80%99s-phoney-fiscal-war/.

6 According to the Institute for Fiscal Studies (2009), public spending has increased by over 10% of GDP. Quoted in Cable, V. 'Tackling the fiscal crisis: a recovery plan for the UK' (2009)

7 See also Cabinet Office, 'Future Strategic Challenges for Britain' (February 2008)

8 See also Department for Energy and Climate Change, 'Explanatory Memorandum to The Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order (May 2009)

9 Royal College of Physicians the Faculty of Public Health, and the Royal College of Paediatrics and Child Health 'Storing Up Problems: The medical case for a slimmer nation' (2004) http://www.rcplondon.ac.uk/news/news.asp?pr_id=201

10 Institute for Fiscal Studies, 'Micro-simulating child poverty in 2010 and 2020' (February 2009)

11 UK Commission for Employment and Skills, 'Ambition 2020: World Class Skills and Jobs for the UK' (2009)

Even in the absence of a short term fiscal imperative, it would be important to understand the cost pressures implied by these long term challenges and the strains they will place on our welfare settlement.

We're all progressives now

Whilst all three main political parties have declared the need to cut public spending, each has also promised to continue the process of 'progressive reform'. Speaking at the Liberal Democrat 2009 spring party conference, their Deputy Leader Vince Cable said "A tax cut financed by taxes on the very wealthy and a clampdown on tax dodging will be at the heart of our election offering. The spirit of our alternative budget will be the same which inspired the People's Budget 100 years ago - when liberal radicals led by Lloyd George laid the foundations for progressive politics in Britain."¹² Author of the Conservative Party manifesto, Oliver Letwin, spoke recently of "progressive ends through Conservative means...to improve schools, improve hospitals, improve the way we do welfare, or get prisoners out of drugs and crime..."¹³ As such, Shadow Chancellor George Osborne has declared that, "The torch of progressive politics has been passed to a new generation of politicians - and those politicians are Conservatives."¹⁴ Finally, Labour has long claimed the 'progressive' mantle and Peter Mandelson recently defined the progressive challenge for social democrats to be how to deliver quality public services in a period of public spending constraint.¹⁵

Despite this rhetorical commitment to both progressive reform and to balance the budget, no party has yet specified how they might achieve these dual aims in practice. Without such a plan there is a significant danger that Whitehall will resort to a cost reduction exercise, top-slicing all departmental budgets. The result of this 'lose-lose' scenario is likely to be fewer, poorer quality public services where the benefits do not necessarily go to those in greatest need and where investment is cut for short term expedience.

Although squaring the circle of simultaneous reform and spending cuts will be no mean feat, it is not impossible. It will certainly require us to become more

12 Cable, V. Speech to Liberal Democrat Spring Conference (March 7 2009) www.libdems.org.uk/news_speeches_detail.aspx?title=Vince_Cable%E2%80%99s_speech_to_the_Liberal_Democrats%E2%80%99_spring_conference&pPK=ba631353-43cf-4ac3-8d00-349f3210cf59

13 BBC news online, 'Manifesto man: Oliver Letwin' (September 18 2009) news.bbc.co.uk/1/hi/uk_politics/8247220.stm

14 BBC news online, 'We're the progressives - Osborne' (August 11 2009) news.bbc.co.uk/1/hi/uk_politics/8194719.stm

15 Mandelson, P. Speech at the London School of Economics (September 14 2009): www.labourmatters.com/the-labour-party/full-text-peter-mandelson-speech-at-lse/

creative in the way we think about the resources we have to call upon. What *new resources* can citizens bring to the table? How can we organize public services to be more productive? How redistributive *should* the welfare system be? Finally, what do we *want* from public services? Underlying this discussion is not a narrow focus on cuts for the sake of balancing the budget alone, but much broader questions about the division of responsibilities between the citizen and the state.¹⁶

It is only with a clear sense of destination in mind that we can ensure that decisions made to address our short term fiscal constraints do not compromise the meeting of longer term goals in the face of emerging demand challenges. Long term cost pressures are mounting, and certain groups of people will be exposed more than others to these challenges. A starting point for this debate must be a better understanding of current distributional issues – who pays, who gains, when and how?

This report

Towards an understanding of contributions and benefits in public spending

This report (written by Volterra Consulting for the Commission on 2020 Public Services) is part of the third and final project in our ‘*Scoping the Challenges*’ series. It seeks to understand the relationship between contributions and benefits in UK public spending. It looks at where tax revenues come from and how public money is spent. While Treasury figures are usually presented at a departmental level, Volterra’s report seeks to understand ‘who pays’ and ‘who gains’ at a more detailed, household level. While the Office for National Statistics (ONS) only allocates 50% of total government spending and 60% of revenue, Volterra go further to allocate the remainder of public finances. Using an assumption-based model (allocating expenditure and revenue on a per unit basis, informed by additional secondary data¹⁷) they cut through the opacity of existing, official figures. This sheds valuable light on the relationship between contributions to, and benefits from, public spending in the UK.

16 As history shows, there are economic and political costs associated with reform – see Alldritt et al. ‘Scoping the Challenges, A Brief History of Public Service Reform’ (2009).

17 The primary assumptions used to allocate remaining revenue are that employer National Insurance Contributions (NICs) are assigned in line with employee NICs, and that business rates and corporation tax ‘paid’ by any given household is assumed to be directly proportional to the amount of indirect taxes paid by that household. In terms of expenditure, most of the remaining health and education expenditure is allocated according to the pattern of distribution assumed in the ONS study. A small part, about 10%, is allocated on a ‘per unit’ basis and a range of values is given where this varies by ‘person’, ‘adult’ or household. General public services, defence, public order and safety, economic affairs, protection of the environment, housing and community amenities and recreation, culture and religion amount to approximately 35% of public spending. These categories are also allocated on a per unit basis and – similar to health and education – a range of values is suggested.

The importance of fiscal transparency

Understanding patterns of contributions and benefits is important for three main reasons. The first is that too little is known about the relationship between contributions to, and benefits from, public money (whether in cash benefits or in kind through other public services). Despite a quarter of all national income being channeled through public spending on services and welfare,¹⁸ and tax revenues amounting to nearly two-fifths of national income,¹⁹ there is relatively little transparency beyond the top lines.²⁰

There are some advantages to having a single, national ‘pot’ into which the vast majority of taxation flows. At a national policy level, it gives decision makers the flexibility to distribute funding as required. Within our highly centralized welfare system a single pot, into which all pay and from which all receive, is an important part of what legitimizes universal entitlements allocated on the basis of need and helps to foster a sense of social solidarity.

However, these advantages need to be balanced against the positive value of fiscal transparency. Fiscal transparency is important for reasons of democratic accountability and the healthy relationship between citizen and the state. If the system is not deemed legitimate or ‘fair’, people will refuse to fund its redistribution of benefits in cash or in kind. Determining what is fair is a matter for democratic political debate, and that debate needs information. One building block for the discussion would be an objective account of the individual benefits people receive and the how this relates to the contributions they make.

Second, it is important because the level of demand for public services and welfare is affected by the lack of a clear line of sight between the amount individuals pay in tax and the services they receive. If a service is (seemingly) ‘free’ (at the point of need) then simple economics suggests that demand will be infinite. If the public does not know the real cost to the taxpayer, this lack of information (all else being equal) impacts upon their demand for public services and welfare. And this might be a large part of why, for example, Britain has a comparatively low savings ratio for private pensions.²¹

18 Hills, J. ‘Inequality and the State (2003, p1)

19 Ibid. p1

20 This lack of transparency arises largely from the fact that taxation is mostly levied at a national level and redistributed via department budgets and local grants by a highly centralized political system.

21 For general information on the UK savings ratio over the last few decades, see – for example – www.forium.co.uk/Savings-Accounts/Saving-Account-News/Savings-ratio-over-the-decades.html. For more on the recent rise of the UK savings ratio, see www.bankingtimes.co.uk/01102009-household-savings-ratio-increases-to-5-6/. Note that the savings ratio is highly cyclical, correlated negatively with economic growth (as growth falls, savings tend to increase).

Third, understanding the distribution of contributions and benefits is of particular importance in the present climate of impending spending cuts. As Whitehall looks to take out perhaps 13% of departmental budgets, the distributional effect of this on individuals and families is almost unknown unless we see the current fiscal pattern of contributions and benefits. Cutting back public spending without understanding the impact of the present system of redistribution is like scrambling in the dark. Volterra's work seeks to shed a ray of light on the matter.

'Distribution of Public Finances' - Headline Findings

Volterra's report to the Commission on 2020 Public Services shows that income, household composition (with/without children or retired) and position in the lifecycle are the three most significant variables influencing whether a household is a net contributor or beneficiary of public spending:

- **Income:** Across all households in the population, and at any single point in time, the highest earning 30-40% pay more in taxes than they benefit from in spending. Cash benefits are distributed mostly to the lowest earners (and retired households in particular).
- **Household composition:** Households with children in the bottom half of the income distribution receive the largest proportion of total public expenditure (23%). Households without children in the top half of the income distribution provide most towards the public finances (41%).
- **Position in the lifecycle:** Net benefits rise when a household has children, fall when they do not and rise again at retirement. Most retired households are net beneficiaries of public spending – only those highest earning 20% of households pay more in taxes than they receive in benefits. This is partly the result of cash transfer (such as pensions and the Winter Fuel Allowance), and also because retired households receive the highest amount of per household health expenditure.

These three factors are often interrelated. As indicated above, most retired households fall in the lower income deciles and become net beneficiaries, where at previous stages in the lifecycle they may have been net contributors. Similarly, amongst the higher income deciles households are less likely to have children. This compounds their net contribution to the state since they pay more tax in absolute terms and, of all household types, receive the least in direct benefits (in cash and in kind).

Distribution also varies by **region**. The Greater South East (defined as East, London and South East) ‘super-region’ has 36% of the UK’s population, contributes 42% of total government revenue and receives 30% of the spending. Expenditure per-head is highest in Scotland and Northern Ireland. London contributes particularly high amounts in income tax, NICs and stamp duty and receives the largest proportion of expenditure on transport. The northern regions contribute relatively more in VAT and indirect taxes than other regions and receive relatively higher spending on enterprise and economic development and employment policies.

‘Distribution of Public Finances’ – Emerging Questions

This research report is only the first step in our project to illuminate the fiscal choices facing society. A summary of Volterra’s report is published below. A full version, including detailed data analysis and explanation of the modeling assumptions used, can be found on the 2020 Public Services Trust website: www.2020publicservicestrust.org.

The data revealed in Volterra’s report prompts some important questions, many of which are especially relevant to the current debate on spending cuts:

- Despite so much apparent redistribution, **why do we remain such an unequal society?**
- Are there **better ways of tackling inequality** than traditional forms of redistribution between individuals?
- Are there better ways of helping individuals to **manage the risks they face over their lifetime?**
- If the vast majority of retired households are net beneficiaries of public spending, how will we be able to afford to support our **ageing society?**
- If the bottom half of the income distribution already pay proportionately more in VAT, council tax, indirect taxes and duties (such as road tax or fuel duty), how should this effect the way we consider **alternative funding mechanisms** (such as user charging, insurance models or hypothecation)?

Further research

It is the nature of inquiry that one question leads to another. In particular, there are three questions arising out of this piece of work which warrant further research:

1. How benefits from, and contributions to, public spending vary across individuals' lifetimes.
2. How patterns of access to, and actual consumption of, public services vary between individuals within different income deciles.
3. How the data revealed here informs the debate on alternative welfare funding mechanisms and on the scope and nature of public services in the future.

The Commission on 2020 Public Services is investigating these three questions and will issue our findings in the New Year. In addition, the Commission will also bring together a range of other research inputs to inform our final report due to be launched in summer 2010. This report will set out a vision for public services designed to meet the needs of citizens during a decade of tight fiscal constraints but ever rising demands.

Volterra Report: A Summary

Purpose of the study

This study aims to further the understanding of the distribution of taxes paid and spending benefited from across the population. We utilise various sources and datasets in order to assign all taxes and spending across the population. Previous studies have carried out similar analysis but of a more partial nature, leaving some taxes and spending unallocated.

Some taxes and spending are easier to allocate than others – income tax is directly linked to individuals' earnings and cash benefits are directly paid to individuals for example. Others, like corporation tax and spending on defence are harder to assign across individuals. However, all revenue which the government receives comes either directly or indirectly from the population and the activities which they undertake. Similarly, the government's spending is designed to benefit the population in a variety of ways, be those individual or of a more general nature.

The purpose of our study is not to consider how spending and taxes physically redistribute money across households, for which analysis it might be reasonable to ignore some taxes and benefits. Instead, we wish to understand, given that all taxes are paid by someone and all spending is for the benefit of the country as a whole, who does contribute to the public purse and who benefits from it? In order to consider this wider picture, it is important to try to allocate all taxes and spending across the population.

This is not a straightforward task. There are many issues with how taxes and spending should be allocated which we address in this study, such as whether corporation tax should be attributed to workers, consumers or shareholders, and how household composition effects the distribution of health and education benefits. There are also some very important factors which this study does not address however and these should be remembered when interpreting the results.

These include:

- The analysis of the benefits of health and education carried out in this study is based purely on the cost of providing a service and the average likelihood of an individual (given their age and gender) making use of that service. They do not capture **actual use** which is likely to vary widely across the population dependent upon many different factors.
- Further to whether an individual or household actually makes use of a given service, there is also the issue that different providers of the same services might be of **differing quality**. For example, the quality of schools and hospitals vary across the country.
- In addition to the two points above, there is also the differing ability of individuals to **make the best use of services** provided to them. For example, individuals placed on government sponsored training schemes might benefit to differing degrees.
- A further issue, which we touch on only slightly in this study, is the consideration of **lifecycles**. Our study separates out households with children, households without children and retired households at a point in time. Clearly in reality, households move through these states over the course of a lifecycle. Therefore if one is a net contributor now, one may become a net beneficiary later in life.
- Further to the actual lifecycle of households and individuals, some of the above factors are correlated. For example, the age at which people have children and retire and their life expectancy might be linked to their use and ability to take advantage of services.
- Finally, many of the benefits of public services are public benefits, even in cases where consumption is private. The fact that the private consumption of services such as education generates public benefits (i.e. a more skilled population) is one of the main justifications for it being a public service.

With these limitations in mind, we find that the ‘balance point’ within the distribution is higher up the earnings distribution than might at first be expected. Our analysis suggests that across all households in the population, only the highest earning 30-40% pay more in taxes than they benefit from in spending.

The purpose of this study is to assess the degree to which government revenue and spending can be allocated across the population and the point where taxes paid and benefits received approximately balance. We consider how earnings deciles, household type and region affect the allocation of taxes paid and public spending received.

What makes up government revenue and how is it spent?

In 2007/08 total government receipts were £548bn and total public sector expenditure was £555bn (£520bn and £523bn respectively in 2006/07). Three quarters of public revenue comes from income tax, national insurance, value added tax (VAT), corporation tax and fuel duty. A third of public spending is on social protection and a further third is on health and education.

Table 1.1 Summary of current receipts and public spending, 2007-08

Tax category	Current receipts		Spending category	Public Spending	
	£bn	%		£bn	%
Income tax	147.4	27%	Social protection ^a	187.5	34%
NICs	100.4	18%	Health	102.0	18%
VAT	80.6	15%	Education	78.1	14%
Corporation tax	46.4	8%	General public services ^b	50.5	9%
Fuel duties	24.9	5%	Economic affairs ^c	39.2	7%
Council Tax	23.3	4%	Defence	33.6	6%
Business rates	21.4	4%	Public order & safety	31.4	6%
Other ^d	104.0	19%	Other ^e	33.0	6%
Total	548.4	100%	Total	555.3	100%

- a) Social protection includes: personal social services, sickness and disability, pensions, family benefits, income support and tax credits, unemployment and housing benefits. A full breakdown of social protection expenditure can be found in the Appendix to the full report (Table A2.9).
- b) General public services include public debt transactions, executive & legislative organs, financial & fiscal affairs & external affairs, foreign affairs etc.
- c) Economic affairs include transport, commercial & labour affairs, agriculture, forestry & fishing, R&D economic affairs, etc.
- d) Other taxes include stamp duties, tobacco, wine, spirits, beer & cider duties, vehicle excise duty, capital gains tax, inheritance tax, customs duties, insurance premium tax, petroleum revenue tax, betting & gaming duties, air passenger duty and other revenue including rent, interest etc.
- e) Other spending includes housing & community amenities, recreation, culture & religion and environment protection. More information on sub categories of spending and revenue can be found in the appendix.

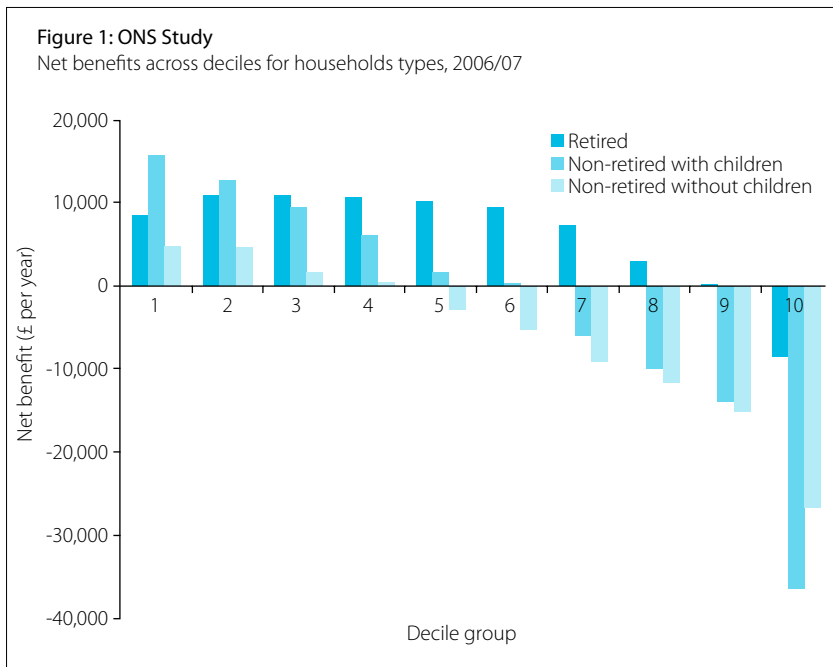
Data Source: HMT Public finances databank and PESA

Inequality in income

The Office of National Statistics (ONS) carries out an annual analysis of how taxes and benefits redistribute income between households in the United Kingdom. The purpose of the ONS study is to assess the degree to which cash benefits and other government spending decrease the inequality of income, reducing the gap between the lowest and highest earners.

The ONS study allocates around £360 billion of government revenue and £320 billion of spending across households. This equates to roughly 60% of total revenue and around half of public sector expenditure. The study only allocates the revenue and spending which it finds 'can be reasonably attributed to households'. It does not include those which are harder to trace or to attribute (for example revenue from corporation tax and spending on defence). This means that the study only presents a partial analysis, with some revenue and spending unaccounted for.

Based on the ONS assessment, the redistribution of income which takes place via taxes and benefits reduces the income inequality between the top and bottom deciles from 25 to one to 5 to one.²² In this study a series of assumptions are used to allocate further revenue and spending across households. Beyond these assumptions, any remaining expenditure (for example on defence) is simply allocated on 'per-head' basis. Overall, this allows us to consider a much more complete picture.

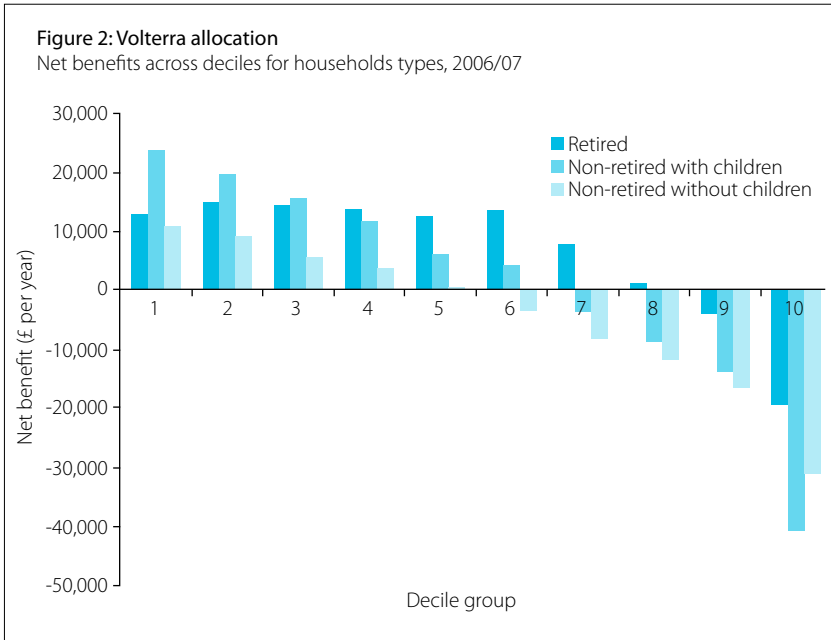


²² Note this study refers to income alone. The distribution of assets between households is not featured.

Who pays and who benefits?

Across households

Figure 1 above summarises the net benefits of public spending across household types according to the ONS. Figure 2 illustrates the distribution of net benefits allocated using our assumptions based model (explained in detail in Section 3.2. of the full report, which is published on the 2020 Public Services Trust website - www.2020pst.org).



Comparing the two graphs above, we see that a fuller allocation of taxes and benefits (Figure 2) shifts the balance point – where contributions equal benefits – further up the income spectrum. Using the ONS data in Figure 1, this balance point lies between the 5th and 6th income deciles for non-retired households. Volterra's allocation moves this balance point towards the 6th and 7th income deciles. The reasons for this are, first, that the ONS allocates more taxes than benefits (approximately 60% and 50%, respectively). Second, some of the additional tax allocation weighs more heavily on the higher part of the income distribution. Both of these factors mean that a fuller allocation of taxes and benefits shifts the balance

point; our analysis shows that, across all households in the population, only the highest earning 30-40% pay more in taxes than they benefit from in spending.

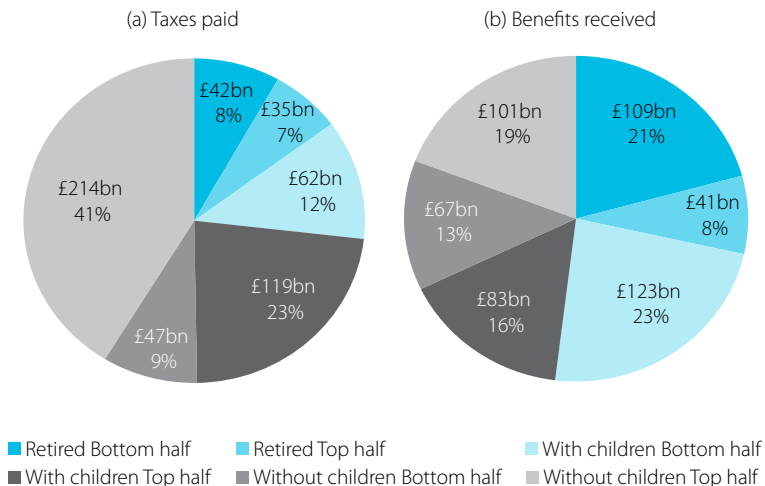
Figure 2 also shows that retired households receive more from benefits than they pay in taxes even if they earn over 8th decile earnings. The 8th decile point is the point at which 20% of the population earns more than this and 80% earns less. The taxes paid and benefits received by households with children balance at around 6-7th decile earnings. Households without children however pay more in taxes than they receive in benefits until they earn around the median of the distribution.

As we have seen, there is considerable variation in the tax liability and benefit eligibility for different types of households. In particular, most retired households are net recipients of the tax/benefit system and households with children are eligible for a number of additional benefits or tax credits which cannot be claimed by households without dependent children.

The pie charts below compare the proportions of all revenue and spending allocated across different cohorts of the population. This shows that the majority (65%) of taxes are paid by non-retired households in the top half of the income distribution. Low earning retired households and households with children receive around half of all benefits.

Figure 3: Who pays and who benefits

Full Volterra allocation of taxes and benefits across household types in different halves of the distribution, £bn, 2006/07



Across regions

The table below summarises the expenditure and revenue by region. We find that the South East is the largest net contributor, followed by London which contributes between £8.5bn and £16.7bn more in taxes than it receives in benefits. If this area is expanded to the Greater South East, the 'net contribution' rises to £42bn-£44bn, or 9% of total revenue.

	Expenditure		Revenue - average		Net benefit £bn
	£bn	% of UK	£bn	% of UK	
North East	24.1	4%	17.0	3%	7.1
North West	64.2	12%	48.5	9%	15.7
Yorkshire	44.0	8%	36.1	7%	8.0
East Midlands	35.0	6%	32.6	6%	2.5
West Midlands	46.6	9%	39.3	8%	7.3
East	43.1	8%	51.4	10%	-8.3
London	77.9	14%	90.5	17%	-12.6
South East	63.1	12%	85.3	17%	-22.2
South West	41.7	8%	41.8	8%	-0.1
Scotland	53.1	10%	41.4	8%	11.8
Wales	29.1	5%	19.9	4%	9.2
Northern Ireland	19.2	4%	12.2	2%	7.0
UK Total ^f	541.3	100%	516.0	100%	25.3

f) Totals in Tables 1.1 and 1.2 do not match. Table 1.1 Current Receipts includes £32.4bn of other revenue from rent and interest payments, which is excluded from Table 1.2. Table 1.1 Public Spending includes £13.9bn of outside UK spending which is excluded from Table 1.2.

Data Source: Volterra estimates and PESA.

What do they pay and how do they benefit?

Across the income distribution

The pie charts below highlight the difference in the composition of benefits received and taxes paid for the bottom and top halves of the distribution. The dominance of cash benefits for the lower earners and income tax and national insurance contributions for higher earners are evident.

Across the household types

The pie charts below highlight the difference in the composition of **benefits received** for the bottom and top halves of the distribution across household types. The dominance of cash benefits for the lower earners and retired households is evident, as is the education benefit for households with children.

Figure 4: Volterra Distribution of benefits received by type²³, average £pa per household, 2006/07

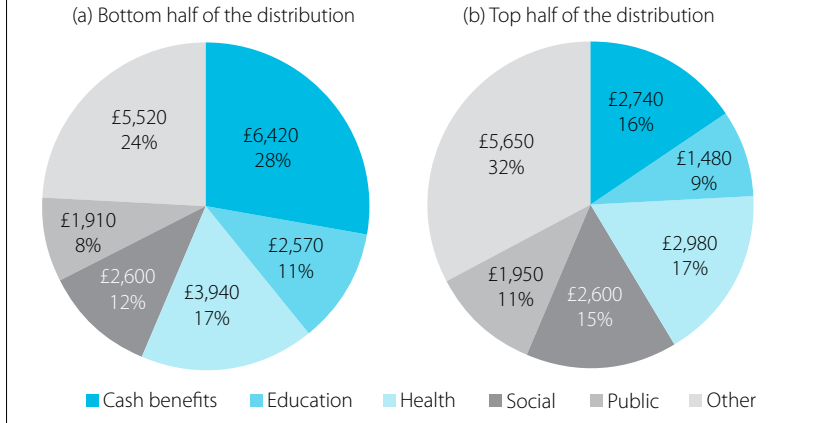
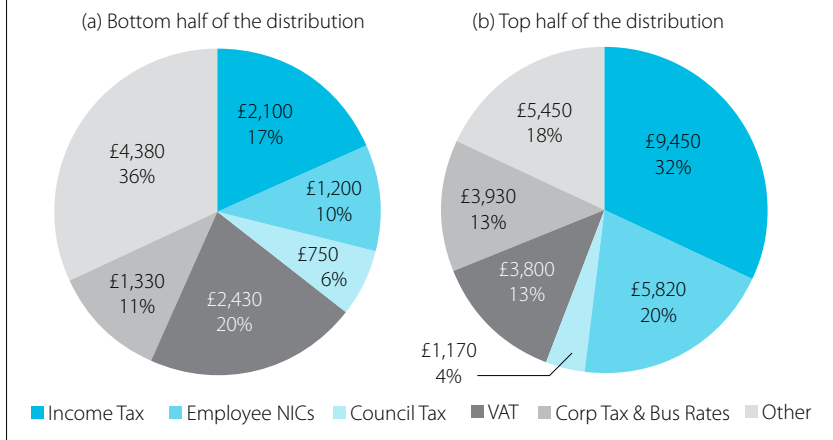


Figure 5: Volterra Distribution of taxes paid by type²⁴, average £pa per household, 2006/07



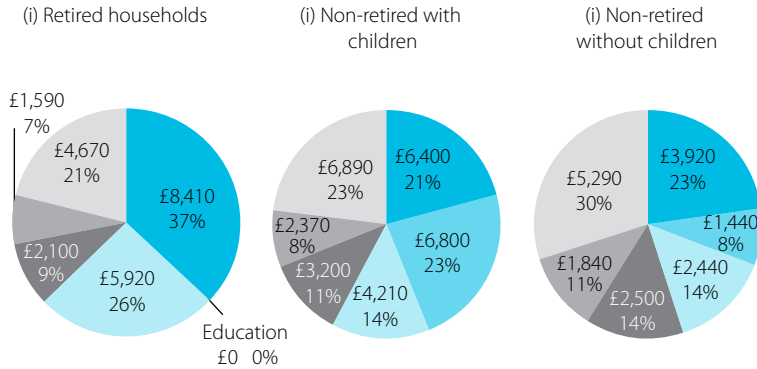
²³ 'Social' captures social protection expenditure not allocated by the ONS study (in 'Cash Benefits') and includes: Old age, Sickness and disability, Family and children and Housing; 'Public Services' is all spending allocated by HMRC as 'general public services': public debt transactions (60%) and executive and legislative organs, financial and fiscal affairs, external affairs (20%), foreign aid, and 'Other' benefits include: defence, public order and safety, economic affairs, environment protection, housing and community amenities, recreation, culture and religion.

²⁴ The 'Other' category of taxes in the ONS allocation includes fuel and vehicle excise duty, alcohol and tobacco duties, and other indirect taxes.

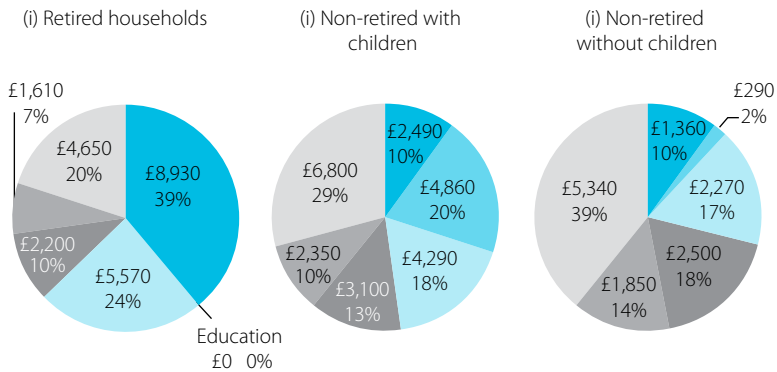
The pie charts below highlight the difference in the composition of **taxes paid** for the bottom and top halves of the distribution across household types. The dominance of income tax and national insurance contributions for the higher earners is evident, as is the relatively larger payment of VAT and other taxes for lower earners and retired households.

Figure 6: Volterra Distribution of benefits received by type, average £pa per household, 2006/07

(a) Bottom half of the distribution



(b) Top half of the distribution

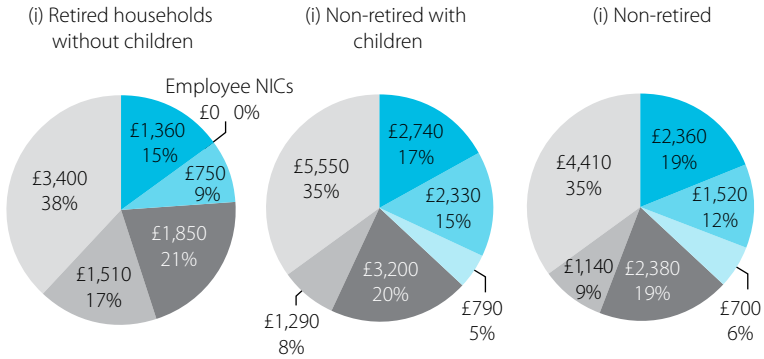


■ Cash benefits ■ Education ■ Health ■ Social ■ Public ■ Other

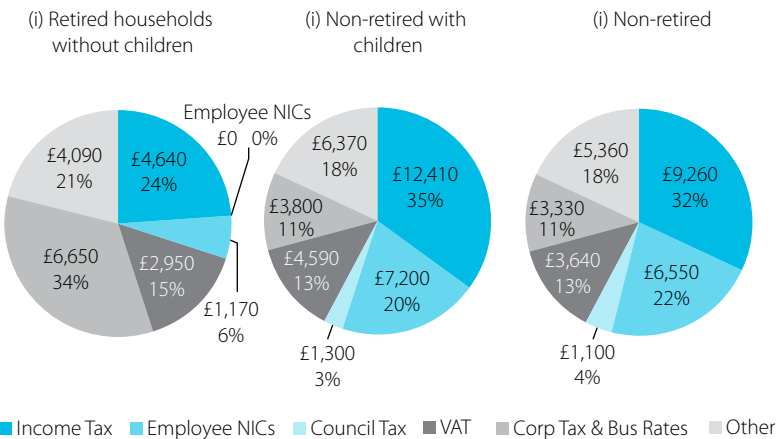
In particular, note the proportion of tax ‘paid’ by retired households in corporation tax or business rates. Volterra assigns this significant source of revenue (12% of the total) by assuming that the amount paid by any given household is directly proportional to the amount of indirect taxes paid by that household. This is because corporation tax is deemed to have been passed onto the consumer via higher prices

Figure 7: Volterra Distribution of taxes paid by type, average £pa per household, 2006/07

(a) Bottom half of the distribution



(b) Top half of the distribution



■ Income Tax ■ Employee NICs ■ Council Tax ■ VAT ■ Corp Tax & Bus Rates ■ Other

of goods and services. Since the vast majority of taxes paid by retired households are indirect, this means that they pay a high proportion this form of taxation. (See the full report on the 2020 Public Services Trust website for a detailed consideration of methodology.)

Across regions

London contributes particularly high amounts to revenue in the form of income tax, NICs and stamp duty. The northern regions contribute relatively more in VAT and indirect taxes than other regions.

The three northern regions of the North East, North West and Yorkshire & Humber all have higher proportions of spending on enterprise and economic development and employment policies.

London has considerably higher spending on transport which probably reflects its position as a commuter city for a catchment of the Greater South East. London also has higher spending on public order & safety and housing & community amenities. Wales, Scotland and Northern Ireland all have higher spending on recreation, culture and region than the English regions.

How might net benefits look over a lifecycle?

A further issue is the consideration of lifecycles. In the earlier sections we have separated out households with children, households without children and retired households, at a point in time. Clearly in reality, households move through these states over the course of a lifecycle. Therefore if one is a net contributor now, one may become a net beneficiary later in life or vice versa. There are an infinite set of potential lifecycles, varying based on whether/when people have children, retire, die and so on and we cannot consider them all. In order to carry out some illustrative calculations around what a 'typical' lifecycle might look like, we make some simple but reasonable assumptions around when households have children and life expectancy in order to consider how net benefits may vary over their lifetime.

We consider two types of household – those which have children and those which do not – and we consider each of these for three points within the earning distribution – a low, medium and high earning household (defined as the 25th percentile, median and 75th percentile, respectively). We then average the benefits and taxes over the course of a lifecycle, and estimate the average annual lifecycle benefits which are detailed in the table below.

Table 1.3 Volterra illustrative estimates of average annual benefits and taxes over the course of a lifecycle, for households with and without children, at three points within the earning distribution

Family type	Family with children			Family without children		
	Low	Mid	High	Low	Mid	High
Volterra estimates (£pa)						
Benefits	24,012	22,327	20,040	19,585	18,730	16,604
Taxes	11,223	16,891	24,811	10,152	15,307	22,705
Net benefits	12,789	5,437	-4,772	9,433	3,424	-6,100

The table above provides an average over the whole lifecycle but the benefits and contributions made by a household will vary through time. The charts below show the variation through time in net benefits for the different family and earnings levels using our 'typical' assumptions. They show that net benefits rise when a household has children, fall when they do not and rise again at retirement.

The assumptions used in order to carry out some illustrative lifecycle analysis allow us to show how the scale of benefits and taxes can vary over the course of a lifetime. Further analysis would be required to consider the wider complexities relevant for more complete lifecycle analysis and would improve understanding of the actual range of net benefits which may occur over a lifetime.

Figure 8: Net benefits over a lifecycle for 'typical' household with children

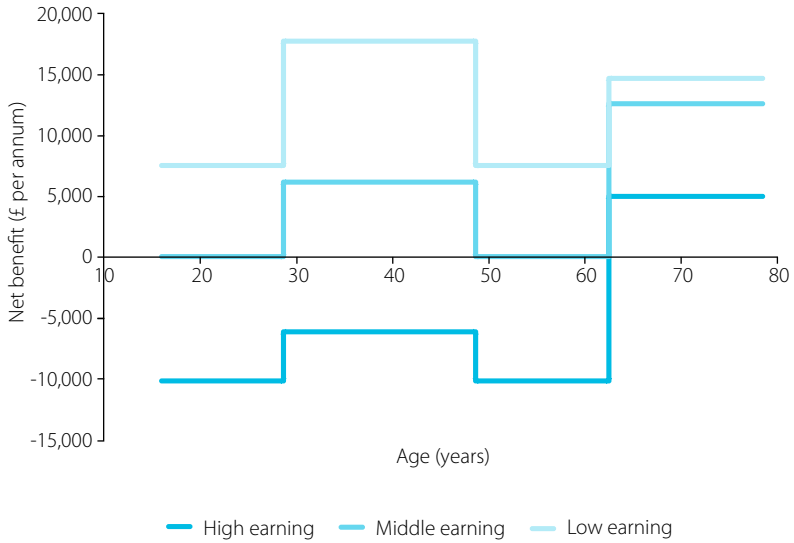
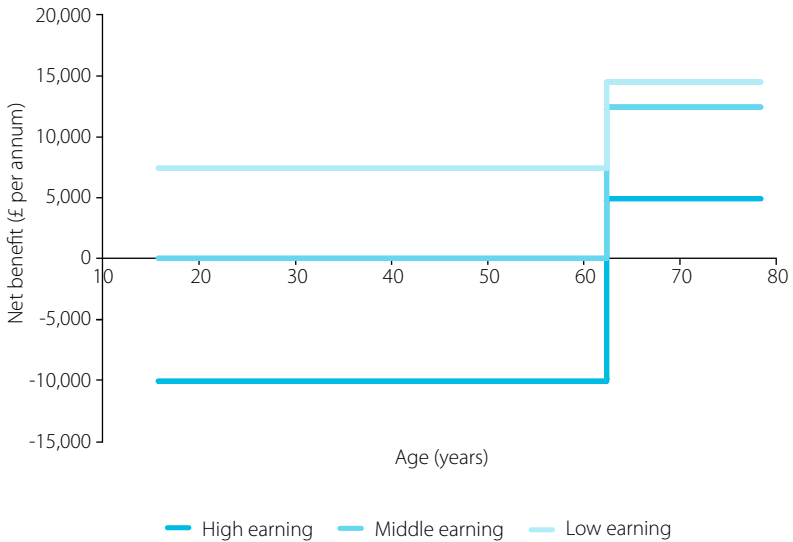


Figure 9: Net benefits over a lifecycle for 'typical' household without children



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