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Gender and Taxation: A UK Case Study

Jerome De Henau, Susan Himmelweit and Cristina Santos

INTRODUCTION

The issue of taxes has always been a highly politicized one in the UK, and never more so than in 2009 as the UK government discusses how to rebalance its budget after rescuing its banking sector with its economy suffering its most severe financial crisis since the 1930s. Debates about taxes, however have tended to focus mainly on the overall level of taxation and government expenditure and on distributional effects between households. With the exception of the work of the Women's Budget Group, a think tank that regularly comments on the gender implications of the Chancellor of the Exchequer's annual budgets, little attention has been paid to the gender aspects of the taxation system. In particular, there has been little debate about what effects any proposals for tax rises to pay for a 2008 stimulus package or for bailing out the banking sector are likely to have on men and women.

This chapter seeks to address this gap by analysing some gender aspects of the UK personal income tax system and its expenditure taxes. Taxes have both distributional and behavioural impacts and both of these impacts can be gendered. In this chapter we consider their impact on both inter- and intra-household inequalities, as well as whether taxes reinforce or challenge existing gender roles.

Following a brief overview of existing gender inequalities in the UK, its tax system and fiscal changes brought about over the last 30 years, this chapter will present a gender analysis of the UK personal income tax system, including its tax credits. It will then analyse the incidence of expenditure taxes on households of different gendered types before the 2008 stimulus package, and simulate the impact of the proposed stimulus package as well as some alternative policy options. Finally, it presents a set of policy proposals based on the analyses and considers the extent to which taxation could be used to tackle gender inequalities in the UK.

A GENDERED PICTURE OF EMPLOYMENT AND INCOME

In order to assess the gendered impact of taxes we need to understand the nature of gender divisions in the UK. The inequalities that are most relevant to the distributional impact of tax are gender differences in employment hours and wage rates, in the income of the households in which men and women live, and in their access to that household income when living with others. Taxes also have a behavioural impact through their incentive effects. Here the most relevant inequalities concern unequal gender roles, especially with respect to the labor market and caregiving responsibilities.

Employment Hours and Wages

Rates of adult employment (ages 16-64) are high in the UK compared with the rest of Europe, for both men and women, with rates of female employment (65.8 per cent in 2006) close to those of the Scandinavian countries (European Commission 2008). However, while men work long hours, more than 40 per cent of female employment is

part-time, a proportion which has remained unchanged since the mid-1980s, and is one of the highest in Europe.

High rates of women's part-time employment, together with a relatively low minimum wage, compared with European countries of similar levels of GDP per capita, have been significant factors in sustaining the UK's large gender pay gap and explain why around two-thirds of low-paid employees are women (Palmer et al. 2008). On top of this, the UK has a particularly large part-time wage penalty by European standards, with a median hourly wage of part-time employees only 63 per cent that of full-time employees. Even the full-time gender pay gap is high in the UK, particularly at the top end of the earnings distribution (with a 21% gap on average between the top deciles of men's and women's earnings, ONS 2008).

The gender pay gap reinforces a traditional division of caregiving responsibilities within households. Because childcare provision is patchy and expensive in the UK, it often makes financial sense, at least in the short term, for women, particularly low-paid women, to reduce their hours of employment to cover family care needs. This combined with men's long working hours leaves little scope for challenging traditional gender roles. Women not only receive lower pay but also work fewer hours, often in part-time jobs, with the result that their lifetime earnings are considerably lower than men's; for women born in 1970, earnings up to retirement are projected to be only 62 per cent of those of men (Joshi 2005).

Household Composition and Income Distribution

A large proportion of UK households (28 per cent in 2006-07) are single-person households, and about half of these are pensioners, the vast majority of which (76 per cent) are women (Jones 2008). There are also a relatively large number of single-parent households; in 2006, 24 per cent of children lived in single-parent households, 90 per cent of these living with their mother (McConnell and Wilson 2007). The distribution of different household types is not even across household income quintiles. Children are disproportionately concentrated in lower quintiles, as are full-time students and pensioners, particularly women pensioners living on their own. Single-parent families are heavily concentrated in lower quintiles, while households consisting of two or more adults with children are disproportionately in higher quintiles (Jones 2008).

According to a recent report on poverty in the UK (Palmer et al. 2008), women are slightly more likely to live in low-income households (below 60 per cent of the median household income). Overall poverty rates were 20 per cent for women and 18 per cent for men (after housing costs) in 2006-07. This gap is mainly driven by higher poverty rates for single pensioners and for single parents, both of whom are primarily women (50 per cent of single parents lived in poverty). However, when men and women live together, as Fagan et al. (2006:52) point out, "the extent of women's greater risk of poverty may be underestimated because income and other resources are not always shared equally within households". In particular, when resources are tight, women are more likely than men to go without. In such cases, they also tend to have the stressful burden of budgeting and managing debt (Vogler 1994; Women's Budget Group 2005).

THE UK TAX STRUCTURE

In contrast to other countries studied in this volume, the UK is clearly a developed economy. In fact, it is the sixth largest economy in the world in terms of output, with an estimated GDP of nearly USD 2,800 billion, although it ranks only 22nd by size with a population of just over 61 million (IMF 2008). Like other developed economies, it has a well developed taxation system, raising a large proportion of its revenue from personal income tax, which is used not only to fund public expenditure, including the welfare state, but also for transfer payments that redistribute income. Some of these payments, such as the Child Benefit or Caregivers Allowance, compensate individuals and families for extra expenses or for time spent out of the labor market to do with caring responsibilities. Others are simply designed to relieve poverty. Since women tend to bear most of the costs both in time and money of caring for children and adults, and are over-represented among the poor, both types of payments tend to be paid to women more than men. Women also benefit more from much direct expenditure on welfare services; they are both greater users of the health service, for example, and the ones who through their own efforts compensate for any failure of state welfare services. Since both transfer payments and these expenditures have to be paid for from taxation, the overall *level* of taxation has a clear gender impact.

Level of Taxation

Figure 1 shows how net tax revenues (including social security contributions) have varied as a share of GDP in the UK over the last 30 years. The year 1979 is a convenient starting point since it marked the election of a Conservative government that promised to reduce government spending and cut taxes. Although this government succeeded in making taxation highly unpopular, they were not in the end successful in cutting taxes, as Figure 1 shows: by the end of its period of office, taxes were higher than when the government was first elected. The other notable date is 1997 when the New Labour government was elected, promising to no longer be the party of high spending and taxation. Since 1997, taxes have risen as a share of GDP, but only slightly, remaining lower than at their peak in the early 1980s, when there were also substantial non-tax revenues (e.g., from national industries that have since been privatized). The share of national income taken in tax in the UK is now around the average for developed countries: lower than in most of the EU-15 countries (such as France, Italy and the Scandinavian countries), but higher than in most of the new EU countries of Eastern Europe and than in the USA, Japan and Australia.

Figure 1 near here

Before 2008, the share of government revenues was projected to stabilize at about 40 per cent of GDP, which was relatively low by European standards (Adam et al. 2008). In November 2008, the government announced a stimulus package which included immediate temporary cuts in VAT and permanent changes in some other taxes, some increases in spending to be paid for by future tax rises (from April 2011) including the introduction of a higher personal income tax rate for the highest incomes. Excluding the cost of partial nationalization of several banks, these measures were projected to reduce the share of taxation in GDP to 34 per cent in 2009-10 before climbing again to 36 per cent in 2013-14 (HM Treasury 2008).

Composition of Taxation

Figure 2 shows the composition of government total receipts in 2007-08, and for comparison in 1978-79 and 1996-97, years which coincide with the changes in government mentioned above. In 2007-08 about 45 per cent comes from personal income tax and national insurance, roughly the same proportion as before the Conservative government was elected in 1979; they had succeeded in cutting this share to 23 per cent by 1997, but the Labour government then reversed that trend. The Conservatives increased the share coming from indirect taxes from 23 per cent to 31 per cent; this had fallen to 26 per cent by 2007-08 and will decrease further while the stimulus package's cut in VAT is in force.

Figure 2 near here

These longer-term developments are in line with those seen internationally. They include a switch within indirect taxation from taxes on specific goods towards value added tax (VAT) and a reduction in the progressivity of personal income tax through a reduction in the number of income brackets and through rate cuts (mainly in pre-election budgets¹). And in line with most, but not all, European countries the UK completed the move from joint to individual filing for married couples in 1990². However, since 1999, the effect of independent filing has been counterbalanced by the introduction of jointly means-tested refundable tax credits for low earners and families with children.

Since the election of the New Labour government in 1997, there has been a slight shift away from indirect taxes towards income tax and national insurance (Figure 2). However comparison with 1979 shows much bigger changes, with a doubling of the share of revenue coming from VAT (rates were substantially increased by the incoming Conservative government) and corresponding falls in other expenditure taxes. Substantial cuts in income tax rates in the period 1979-97 were counteracted by rising incomes, leaving the share of revenue contributed by income tax much the same (see Figure 2). There was also a substantial reduction in the proportion of revenue coming from local taxes (and corresponding fall in local government autonomy).

Distributional Effects of the Tax and Benefits System

Although there has been little gender analysis of the UK tax system, a distributional analysis of its impact on households of different income levels is published annually by the Office for National Statistics. Because a substantial proportion of tax receipts are redistributed in the form of benefits and tax credits affecting household disposable income, effects on distribution can be assessed only by examining the tax and benefit system together.

¹ The Conservative government cut the top income tax rates from 83 per cent to 40 per cent (for earnings) in 1980 and abolished the starting rate of 25 per cent. The starting rate was re-introduced by the same party in 1992 at 20 per cent and then cut to 10 per cent (except for savings) by the New Labour government in 1999 and abolished in 2008.

² With the exception of a married couple's allowance for couples in which one partner was born before 1935.

The net effect of this system is redistributive. Before any government intervention, the top quintile of households has an average income 14.8 times that of the bottom quintile; after taking account of (net) cash benefits this ratio is 6.6 to 1. The effect of direct taxation - personal income tax, national insurance contributions (NICs) and local taxes - is to reduce this ratio to 5.5 to 1 for disposable income, but taking account of indirect taxation raises it back to 7 to 1 (Jones 2008: 39)³. Direct taxation is therefore mildly progressive while expenditure taxes are mostly regressive with respect to household income, and the largest contribution to reducing inequality is made by cash benefits and refundable tax credits.

PERSONAL INCOME TAX

To examine the impact of the UK personal income tax (PIT) system from a gender perspective, we need to include national insurance contributions and to take into consideration the system of refundable tax credits (introduced in 1999), which plays an important role in the redistribution of income across households of different types. While personal income tax and national insurance are paid by most adults (30.6 million individuals in 2008-2009, about half the total UK population) (HMRC 2009), by adding those who receive tax credits we can cover nearly all working age adults (except those living below the income tax threshold in households with neither children nor anyone employed).

None of these components of the PIT system have explicit gender biases. However, as will be seen below, given gender divisions and inequalities in the UK, the PIT system as a whole has significant indirect gendered effects on the distribution of income, both between and within households, and on labor market incentives for men and women.

Since 1990, UK personal income tax has been filed on an individual basis. Most employees are automatically enrolled in 'Pay As You Earn' (PAYE), whereby employers deduct tax and national insurance payments directly from employees' wages. Many UK taxpayers therefore rarely, if ever, fill in a tax form. Self-employed persons, however, are responsible for making their own payments.

Income tax schedule

Each taxpayer in the UK receives a tax-free personal allowance, and there are extra personal allowances for elderly people with incomes under a certain limit, as well as for older married couples (or civil partners) and some disabled persons. Income from earnings (and some benefits) above personal allowances is taxed according to a schedule with only two brackets, a basic rate of 20 per cent and a higher rate of 40 per cent (see Table 1) with about 83 per cent of taxpayers liable only to the basic rate (HMRC 2009). There is a reduced lower rate for savings that applies only to individuals whose taxable non-savings income falls below a low threshold. Income from dividends are also taxed at lower rates and further reduced by a non-refundable dividend tax credit of 10 per cent, to remove double taxation of company profits

³ Local taxation ('council tax') is charged on housing and despite rebates available to low-income families is highly regressive, with the poorest quintile paying about 5 per cent of their gross income and the highest only 1.7 per cent. Only the lowest quintile pays more in local than in national direct taxation.

already taxed through corporation tax when paid out as dividends. When calculating into which tax bracket different income sources fall, dividend income is treated as the top slice of income, followed by savings income, followed by other income.

Table 1 near here

The UK personal income tax system is progressive, but only mildly so compared to 30 years ago, and also compared to countries of comparable levels of per capita GDP. Both Conservative and Labour governments have ‘simplified’ the PIT system in ways that make it less progressive, and have made only small changes to national insurance contributions (NICs). This means that the lowest earners, most of whom are women, are likely to pay more income tax in the UK than they would in more progressive systems, such as those in most other parts of Western Europe. Nevertheless, because of their lower average earnings, women pay less income tax than men overall.

National insurance contributions

Working individuals under state retirement age must also pay NICs, which are effectively just another form of income tax since they are used to fund general government expenditure, and payments have little impact on an individual’s eligibility for benefits (Adam and Browne 2006). NICs must be paid by both employees and their employers for all earnings above a threshold corresponding more or less to the basic personal allowance. Employees pay NICs at 11 per cent on any earnings between this threshold and an upper earnings limit (similar to the threshold for the highest income tax band), and at only 1 per cent of earnings above that upper limit. Thus NICs are regressive, as higher earners pay a lower marginal rate than lower earners⁴, and further reduce the already slight progressivity of the income tax brackets. Again, while women, pay lower taxes and NICs on average than men and are the ones most likely not to pay anything in this system, those with lower incomes, who are disproportionately women, pay relatively more tax and NICs in the UK than they would in more progressive systems.

Exemptions and deductions

Table 2 shows which income is taxable, which is tax exempt, the deductions that can be made from taxable income and the tax credits that reduce tax paid. Given the gendered nature of employment and caregiving roles in the UK, deductions show a pattern somewhat favoring men. Deductions are worth more to higher earners, mostly men, and tend to recognize expenses that are directly incurred during employment better than they do the problems for those with caregiving responsibilities in getting to employment. For instance, deductions for childcare expenses are limited and available only to those whose employers participate in a national scheme.

Table 2 near here

Net deductions for pension contributions are a major loss of revenue, costing the government as much as a third of its total expenditure on state pensions, which have increasingly lagged behind earnings since 1982 (Blundell and Emmerson 2003; HM

⁴ Employers pay NICs for each employee who earns over the lower threshold, at a rate of 12.8 per cent. The self-employed pay a flat rate amount of NICs plus a percentage of their taxable profits.

Treasury 2008). Tax-free pension contributions are subject to a lifetime limit that is more than the amount that all but the very highest paid could hope to save in their lifetimes. Deductions for pension contributions are therefore a significant form of redistribution to the well-paid and to men, since the poor and women are far less likely to take out personal pensions. Occupational pension schemes are further subsidized by tax not being payable on both employer and employee contributions. Women are far less likely than men to be offered the chance to enrol in an occupational pension scheme, or to take up such an offer. In recognition of the unsustainably low savings rate of the less well-off, and in partial recognition of gender differences in savings opportunities, the pension system is being reformed. However, although it will now include an automatic element, the new system will continue to encourage savings by offering tax incentives, which will inevitably favour men as and those more likely to have an uninterrupted employment history and be better-paid employees (Price 2007).

Child and working tax credits

The introduction of tax credits was New Labour's flagship policy to combat poverty, particularly child poverty, which is among the highest in Europe. The current Child and Working Tax Credits are an extension of the previous Working Families Tax Credit (WFTC) introduced in 1999, which in turn was based on a much less generous system of Family Credit, a benefit for families with children in employment. Modelled on the Earned Income Tax Credit of the US, these tax credits are refundable (so reach those with incomes below the tax threshold) and aim both to 'make work pay' and to combat child poverty. They are paid directly to recipients, rather than deducted from tax liabilities. Initially WFTC was intended to be paid through the pay packet to one earner however, in response to feminist protest at this change from Family Credit, which had been paid to the mothers, the government allowed families to choose to whom the credit would be paid. It was recognized that paying tax credits intended for children through the wage packet, and thus more often to the man, would have made the objective of reducing child poverty more difficult to achieve (Goode et al. 1998).

In 2003, the system was extended to support more low-income people (not just those with children), and to provide seamless support for children to parents in and out of work. An integrated scheme of two separate tax credits was introduced: the Child Tax Credit (CTC) for low-income families, working or not, and the Working Tax Credit (WTC) for working families, with or without children. Each is paid directly to one person, but they are jointly means-tested on family income.

In these respects tax credits are very similar to other benefits. However, they are treated as part of the tax system in order to reduce the level of taxation and spending in the national accounts (since tax credits count as revenue foregone rather than expenditure) and to free tax credits from the stigma attached to means-tested benefits in the UK.

Unlike the rest of the individual-based income tax system, tax credits are means-tested at the family level. WTC is paid directly to one earner, but the amount of WTC paid to that earner will depend on the earnings and possibly hours of employment of *both* partners. Although two-earner couples can choose who receives WTC, they cannot request it be split between them. CTC is paid directly to the 'main carer'

(nominated by the partners, but in most cases the mother). WTC also provides a substantial subsidy to childcare costs for working parents, which is paid to the main carer.

Both the WTC and CTC introduce problematic new categories into the tax system. The WTC implicitly introduces a problematic category of a 'main earner' even though it does not explicitly use that language. The CTC category of 'main carer' was introduced with the Tax Credits in 2003, implying a household division of labour in which one person takes the main responsibility for caring that not all would accept. Both concepts - 'main carer' and 'main earner' - go against the equal sharing of paid and unpaid household roles.

Both CTC and WTC are jointly means-tested and subject to a progressive taper. The poorest families, with gross total family income below about two-thirds of the median (for families with children) and a quarter of the median (for those without children) receive the maximum amounts, which tapers off steeply above these thresholds. A small 'family' element of the CTC, however, is not withdrawn until family income exceeds approximately twice the median income and then is tapered away much less steeply. Thus, the smallest element of the CTC is paid to most families, but WTC and the more substantial child-based elements of CTC tend to be paid only to poorer families (though the maximum childcare element is sufficiently substantial that, despite means testing, even some middle-income families receive some support through it).

This family-based means-testing of tax credits effectively undermines the individual filing of income tax for lower income families, producing the same labour market disincentive effects for second earners, especially the low paid, as joint taxation. Given the gender pay gap and gender roles that typically regard women as second earners in couples, this is a gender bias that reinforces rather than challenges existing inequalities.

Inflation and uprating

Tax brackets and allowances are automatically increased annually in line with the retail price index (RPI), unless Parliament intervenes. Indexing by prices rather than average earnings increases revenues when real earnings rise (see Sutherland et al. 2008). These welcome boosts to the exchequer have relied on earnings rising faster than prices. During expansions, such revenue increases have often been used to reduce tax rates or introduce new forms of spending (such as tax credits). However, they will not be available in a recession, when wages may not rise above inflation as employment levels fall.

Tax credit levels and thresholds are periodically revised but not automatically indexed. The family element of the CTC, paid to most families, has not been uprated since its introduction in 2003. By contrast, the child element of CTC, paid only to poor families, has been indexed annually to average earnings, and the government has reaffirmed its commitment to helping low-income families by raising the maximum child element above indexation. Nevertheless, income thresholds for computation of both CTC and WTC are not expected to change in nominal terms; so the number of eligible families will fall if incomes continue to rise (Sutherland et al. 2008). Only the

very poorest households would be entitled to increased maximum amounts, which should favour single-parent households, in which women predominate.

Distributional effects of the UK income tax system

While the UK income tax system is one of the least progressive in Europe if we exclude tax credits, the inclusion of tax credits makes the UK system highly redistributive towards very low-income working families, especially families with children, in comparison with other European countries, (De Henau et al. 2007).

To illustrate this and explore its gender effects, we have calculated the total income tax incidence, with and without tax credits, on different types of families at three different levels of gross household income: half median, median and twice the median⁵. We look at male/female households with two dependent children, in three employment situations: dual-earner (in which the man's income is twice the woman's); male single-earner; and female single-earner⁶. For the purpose of tax credits, the woman is assumed to be the main caregiver in the first two cases; in the third case, where the woman is the sole earner, we consider one situation in which the man is the main caregiver and a second in which the woman is both the sole earner and the main caregiver⁷ (see Table 3).

Table 3 near here

Looking at the second column of Table 3, we can see that without tax credits the PIT system is only moderately progressive across sole-earner families, who are taxed more highly than dual-earner families of the same income, as would be expected from an individual filing system. Across dual-earner families the PIT system is more progressive.

Accounting for tax credits shows greater redistribution of income between families. However, at twice median income, tax credits have practically no effect; only the family element of the CTC still operates to reduce the total tax incidence on the household and on the main caregiver by 1.2 percentage points (whatever the distribution of gross income within the family).

At median income, tax credits are more powerful and reduce the total tax incidence: irrespective of the number of earners, the main caregiver has no WTC and receives CTC equal to 11 per cent of gross household income. For single-breadwinner families, this halves their tax incidence. For dual-earner couples, it reduces it by two-thirds. The impact of tax credits is much stronger at half median income: CTC is paid

⁵ Median gross household income of £ 23,036 per year is taken from the Family Resources Survey 2006-2007 (DWP 2008)

⁶ We assume that all earners are employees rather than self-employed, because the self-employed and employees pay different rates of national insurance, though the difference on total tax incidence is small.

⁷ We have not calculated the effects of the childcare element of WTC which partially offsets childcare costs, since it would be misleading to count such subsidies but not the costs that give rise to them. The main effect of the childcare element is likely to be behavioural: reducing the employment disincentive effect for second earners in families with children without alternatives to paid childcare and increasing the uptake of childcare. Capturing such behavioural effects would require a different form of simulation.

at its maximum rate and couples are eligible for some WTC, in total worth about half of the couple's initial gross income, so that couples at this income level are net gainers.

The tax credit system also operates to redistribute income between partners towards more equality, specifically, towards the partner with lower income and towards the main caregiver (in three of our cases assumed to be the same person). This can be seen by comparing the share of female income before and after taxes (Table 3, columns 1 and 4). For couples of twice median income the effect of the distribution of income within the household is tiny, reflecting the low progressivity of the income tax system and the small amount of CTC paid. At median income, there is more distribution within the household, mostly because the main caregiver gains relative to her or his partner.

At half median income, both individuals gain, with a greater gain by the main caregiver. For single breadwinner families, CTC increases a non-earning main caregiver's share of total net income from 0 to 28 per cent. In the dual-earner case, because the woman is the main caregiver, her share of income goes up from one third to almost half of the household's income. Note that if the (female) single earner is also the main caregiver, there is no redistribution between partners at any level of income.

Thus while the tax system on its own does relatively little to redistribute income within and between households, tax credits are an effective way of redistributing income both towards poorer households and, based on the assumptions we made, to women within both poor- and median-income households. The poorest couples are most likely to be single- (or no) earner households within which women are more likely to be the main caregiver. For these couples, the tax credit system has been particularly effective in both raising household income and increasing women's share of it. However this happens largely through the payment of CTC, which is meant for the benefit of children rather than for the main caregiver who receives them.

Gender impact of PIT

There is no explicit gender bias in the UK personal income tax system, as men and women are treated alike. Moreover, unlike in some other European countries (e.g., France, Germany and Spain), the UK income tax system is individualized, removing the indirect gender bias of a higher effective marginal rate for the second earner that joint taxation provides. However, given the large gender wage gap and even larger gender earnings differential due to different hours of work, the impact of income taxation differs for men and women; the latter are less heavily taxed because their incomes are generally lower. But this is less true in the UK than it would be in countries with more progressive income tax systems.

Efforts to target low-income families by concentrating on the tax credit system have some adverse effects for women in couples, as the means-testing of tax credits raises the effective marginal tax rate of second earners, while CTC makes women's income dependent on the presence of children and on being their main caregiver. While this recognizes the contribution made by those who care for children, it undermines incentives to develop a more gender-equitable division of labour and women's financial autonomy by replacing individually taxed earnings with household-based

means-tested tax credits as a source of income for women in poor families. By reducing incentives to seek employment, it may also harm these women's long-term financial prospects and their children's chance of escaping poverty (Fagan et al. 2006); research on the WFTC showed that it increased single women's labour market participation but decreased, albeit only slightly, partnered women's participation (Bennett and Hirsch 2001, Blundell et al. 2000, Brewer et al. 2006). An individualized tax credit system would be more efficient and would reduce the disincentive to the second earner. However, it would be much more expensive if current levels of support were to be maintained and would provide a much more explicit subsidy to low pay, potentially substituting for wage increases.

INDIRECT TAX

Turning to the incidence of indirect (expenditure) taxes, we begin by describing the structure of expenditure taxes in the UK, as well as the data and the definitions used. Because expenditure data is always aggregated to the household level, we can analyse the incidence of indirect taxes only on households, not individuals, raising the issue of how to define gender categories for households. After examining the distribution of individuals across defined categories, we discuss the main results of the incidence analysis, paying particular attention to where there are gendered effects, and simulate actual and potential policy changes to analyse the distributional impact of such changes.

The Structure of Indirect Taxation

Indirect taxes now raise 23 per cent of UK tax revenue. Most comes from VAT, with the remainder being raised by excise duties on alcohol, tobacco, fuel and betting (including the National Lottery), customs duties and a few more specific taxes, such as motor vehicle duties; air passenger duty; insurance premium tax; driving and television licences; stamp duties and fossil fuel levy. Our incidence analysis includes only VAT and excise duties, as the two types of indirect tax that raise the most significant revenue.

There are three VAT rates and some VAT exemptions. Over 50 per cent of the expenditure of the typical household is on goods charged at the standard rate, over 30 per cent on goods that are exempt or zero-rated and only a small proportion are on reduced rate goods, which has however been slightly increasing in recent years (HMRC 2007). Table 4 describes the goods that are subject to each rate in April 2005. The main feature is that most food, domestic fuel and some goods which the government might want to encourage people to consume are zero- or reduced-rated. Under European Union (EU) rules the government can now reduce but not zero-rate goods. This explains the anomaly whereby children's car seats are subject to the reduced rate of 5 per cent, while motorcycle helmets are zero rated because the latter was introduced before the EU regulations were in force. On zero-rated goods suppliers can claim back VAT paid on inputs, but on exempted goods they cannot⁸.

Table 4 near here

⁸ The most important exempt goods included in this analysis do not include substantial VAT-rated goods or services in their production process (Mahajan 2006) so will be treated as zero-rated.

Most excise duties are specific or unit taxes, that is, they are an actual amount per unit purchased. Some goods, such as cigarettes, also have an *ad valorem* or percentage tax, which charges a percentage of the market price. The fuel levy is by far the most important excise duty, and the most significant green tax, in terms of its contribution to government revenue.

Incidence Analysis

The main data source for this analysis is the Expenditure and Food Survey (EFS) which covers about 7,000 households in the UK each year. We used the most recent available data at the end of 2007 (see ONS 2007), based on information collected in late 2005 and early 2006 (the sample period covers 12 months of the year to avoid seasonal effects). This data set covers only private households⁹, excluding people living in hotels, shared flats, lodging houses, homes for the elderly, and so on, and includes levels and sources of income, benefits and contributions, housing characteristics, together with socio-demographic information on all members in the household. It also contains detailed household expenditure data, collected via a face-to-face interview and a diary for respondents to record their expenditure over two weeks.

The number of households responding to the EFS in 2005-06 was 6,258 (about 1 in 4,000) with an additional sample of 527 covering Northern Ireland. The response rate was 57 per cent. The recorded expenditure patterns may underreport some expenditures, notably on tobacco, alcohol and confectionary, for which we cannot reliably correct¹⁰.

Methods of calculation

From our expenditure data, we only know the total amount spent; we do not know the number of units purchased or the actual average price they were charged per unit. However, excise taxes on tobacco and alcohol are charged on amounts purchased, or for tobacco on a combination of amount and price. To calculate accurately the total amount of excise duty tax households pay on these categories, we would therefore need the retail price of all different goods within them. Because not all retail prices were available, we estimated the amount of excise duty paid by households on each category of goods using the retail prices and excise duty paid on some typical excisable goods (Table 5), together with data published by HM Customs and Excise on the amounts of each excisable good released for consumption.

Table 5 near here

¹⁰ There is some evidence of sampling bias (Foster 1996). Sampling and population weights available in the EFS try to correct for this and ensure representativeness of private households according to region, sex and age. Quarterly weights are also available to rebalance seasonal effects due to unsuccessful initial contacts (ONS 2005). For reasons why we do not correct for underreporting see Santos (2009).

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For betting and gaming, excise duty depends on type of activity, level of profits or potential profits. Gambling expenditures are not subject to VAT and calculating excise duties based on household expenditure was straightforward (for details on methods of estimation and calculation see Santos 2009).

Definitions of household types

Three different categorizations of households are used. The first is by ‘headship’, defined as the household reference person, or ‘householder’ in whose name the accommodation is owned or rented.¹¹ If there are joint householders, which is common in the UK, the household reference person is the one with the higher income, or where incomes are the same, the eldest householder. The second divides households by its members’ employment status (as this might affect control over resources), resulting in four categories: male-breadwinner (no female earner and at least one male earner), female-breadwinner, dual-earner and households in which no one is employed. The third is based on numbers of male and female adults and include those with more adult men, those with more adult women and those with an equal number of adults of both sexes.

While headship is not a very useful categorization in the UK, it may give us some information about power within households; but only if it is associated with formal control over accommodation, a higher share of household income or age. As would be expected, while the vast majority of male-breadwinner households are male-headed and female-breadwinner households female-headed (91 per cent and 85 per cent respectively), women are also the head of 25 per cent of dual-earner households (Santos 2009).

The majority of households (64 per cent) have an equal number of adult men and women, with 17 per cent having more men than women and 19 per cent more women than men. Nearly all of these gender imbalanced households consist of adults living on their own or with children. Although in most male/female couple households both partners are in employment, where only one is employed it is usually because the woman has left employment because of caregiving responsibilities, so the sole breadwinner is male. While overall there are roughly equal numbers of men and women who are the sole household breadwinners, 56 per cent of male-breadwinner households are couples and only 41 per cent are men living on their own or with children, while only 22 per cent of female-breadwinner households are couples and 77 per cent are single parents or women living on their own (authors’ calculations using BHPS 2005).

Regarding female pensioners living on their own and single parents, both of which figure prominently in tax policy discussions, we find that female pensioners, like their male counterparts, are found almost exclusively in households in which no one is employed, while 65 per cent of female single parents with dependent children are in female-breadwinner households and 35 per cent are in households in which no one is employed.

Gender Differences in Indirect Tax Incidence

¹¹ In the UK all government-sponsored surveys have replaced the concept of household head with a concept of a household reference person. We use this to define headship.

Incidence by type of taxes

Table 6 presents summary results of the incidence by type of tax (total tax, VAT, excises and fuel levy) according to three gendered measures: sex of household head, employment status of household members and gender balance of household adults. It shows that female-headed households have a slightly lower incidence for tax overall and for VAT, while male-headed households have a considerably higher incidence of fuel tax. By employment status, single-breadwinner households have lower incidence rates for total tax, VAT and excise taxes than either dual-earner or no-earner households, largely related to the presence of children; fuel tax has a higher incidence on the households in which there is a male earner, suggesting that the gendered nature of fuel consumption is, at least in part, a result of men commuting longer distances by car than women (Hamilton et al. 2002).

Table 6 near here

Analysis by household adult sex composition shows a slightly different gendered picture. Fuel tax has a higher incidence on households with more men than women and a lower incidence on households with more women than men. Households with equal numbers of adult men and women, nearly all of whom are couples, have the lowest incidence of excise duties. The difference in VAT incidence between different types of households is insignificant.

Incidence by expenditure quintiles and the presence of children

In the remainder of the analysis of expenditure taxes we will present the results only from the analysis by employment status.

Table 7 and Figure 3 show that the presence of children reduces the incidence of total expenditure taxes for all household types and nearly all quintiles. Except for households with children and no-one employed, the total expenditure tax system has the highest incidence on the middle quintiles, impacting less on the lowest and highest quintiles.

Table 7 and Figure 3 near here

Figure 4 shows that the incidence of VAT is lower for the bottom half of the expenditure distribution (largely because food and some other necessities are zero-rated) and, except for households in which no one is employed, is broadly neutral across the upper half of the expenditure distribution. The presence of children reduces the incidence of VAT relatively less for lower quintiles than it does for higher quintiles.

Figures 4 near here

Figures 5 and 6 show that the incidence of both excises and the fuel levy falls with overall expenditure and children reduce incidence for all household types, more for lower quintiles than for higher ones. This suggests that children reduce the proportion of discretionary expenditure on those 'demerit' goods which attract excise duty and the fuel levy (a higher proportion of expenditure in lower quintiles) and on goods that attract VAT (a higher proportion of expenditure in higher quintiles).

Figure 5 and Figure 6 near here

Among households with children, male-breadwinner households bear the lowest incidence of VAT, probably because they are likely to have the largest families, but dual-earner households and households with no earners pay the most excise duty and fuel levy, especially in the lower quintiles. Not accounting for the effect of children shows there is less difference between the incidence of taxes on different types of households. Among those without children it is households with no-one in employment, largely pensioners, and dual-earner couples who bear the highest incidence of VAT while the impact of excise duties and the fuel levy is highest on households with male earners, in the first two quintiles.

Incidence by commodity groups

Table 8 shows how the incidence of different commodity groups changes across quintiles and households under different employment status categories. Where these categories are not subject to excise duties or VAT reductions, incidence simply depends on the proportion of expenditure on these items.

Table 8 near here

Overall, the commodity groups with highest incidence are transport, fuel, recreation, alcohol (especially whisky and spirits) and tobacco, non-utilities housing expenditure and meals out. Looking across employment categories, the main differences are seen in the incidence of tax due to transport related expenditures, alcohol, tobacco, and clothing.

Figure 7 shows that households with male earners (dual-earner or male-breadwinner) have the highest incidence of tax on fuel for transport, as noted earlier perhaps owing to men commuting longer distances by car, while women are greater users of public transport (Hamilton et al. 2002). The difference is particularly striking in the lowest quintiles, which also have the highest incidence overall. Tax on fuel for transport is more than 2.5 per cent of total expenditure in the lowest quintile for all household types.

Figure 7 near here

The highest incidence of tax on alcohol is on dual-earner households closely followed by those with no earner (see Figure 8). Alcohol tax has relatively low incidence overall at around 1 per cent of total expenditure.

Figure 8 near here

Tobacco tax impacts particularly on households in which no one is employed and on female-breadwinner households. This is particularly striking in the lower two quintiles, where in these two categories there are many single parents. There is particular concern in the UK about smoking among young women, with girls having consistently higher rates of smoking than boys (Cancer Research UK 2009). Our figures show an average tobacco tax incidence of around 1 per cent. Given that only about 20 per cent of the population smokes, this means that the overall incidence of tobacco tax on households that do smoke is high.

Figure 9 near here

The incidence of tax on adult clothing is highest on female-breadwinner households and lowest on dual-earner households, but the incidence overall of tax on clothing is fairly low (Figure 10).

Figure 10 near here

Domestic services and meals outside the house, which might have a role in enabling traditional gender roles to be challenged, have relatively low total incidence; less than 1 per cent for any household category. The tax incidence of domestic services depends more on expenditure quintile, though incidence is higher on female-breadwinner households and on households with no earner (these may be pensioner households employing home helps); see Figure 11.

Figure 11 near here

Meals out show no consistent pattern across household categories or expenditure quintiles, reflecting the heterogeneous reasons why people eat out (Figure 12).

Figure 12 near here

Simulations of policy changes on indirect taxes

Table 9 shows the simulated impacts by household employment categories and across expenditure quintiles of increasing fuel tax, of reducing the standard rate of VAT and of applying VAT standard rate to food, either all food or just basic food.¹²

Table 9 near here

One change that we considered was raising tax on fuel for transportation, which is higher in households with a man in employment. Long hours spent commuting inevitably restrict the time men can spend with their families. Reducing men's commuting times is therefore relevant to transforming gender roles. Figure 13 shows that an increase of 4.3 pence per litre (or kg) for all types of fuel would, within each quintile, impact more on households with a male earner, but would also impact most on households in the lowest quintile. Unless such a tax rise was spectacularly effective in changing behaviour, it would be a good source of extra revenue, which could be spent, at least in part, on better public transport which by reducing congestion on roads might also impact on men's commuting times.

Figure 13 near here

¹² These were estimated by applying the policy rates for each household, then using the EFS quarterly weights to extrapolate to the whole population. The base scenario raises an estimated GBP 80 billion (about USD 43.5 billion), far lower than the official estimates of GBP 121 billion (USD 65.8 billion) for 2006 (HM Treasury 2007, exchange rate is the average 2006 rate, USD 1 = GBP 0.5434). This discrepancy may be due to underreporting as well as the exclusion of some commodities from our analysis.

For comparison with other countries, we also considered removing the zero-rating of either all food or just basic food. These simulations and Figure 14 show the importance of zero-rating food for low-income households, as a standard rate applied to basic food (or to all food) would greatly increase the total incidence on low-expenditure households, especially those in which no one is employed, and far more than it would on higher quintiles.

Figure 14 near here

We also conducted a policy simulation based on the stimulus package introduced in December 2008 that will run until January 2010 which reduced the standard VAT rate to 15 per cent while increasing (permanently) the excise duties on alcohol and tobacco. Table 10 and Figure 15 show that this package resulted in greater overall expenditure inequality, by favouring higher quintiles (who pay more VAT); however, within the lower two quintiles this change favours female-breadwinner households, presumably because they consume less of the goods on which tax rose. Given that putting money in the hands of the poor rather than the rich is recognized to be more effective in stimulating an economy, this measure (which reduced total revenue by almost 9 per cent) did nothing to foster gender equality or reduce inequalities, and was less effective than cutting taxes paid by those on lower incomes or increases in public spending would have been in stimulating the economy.

Table 10 near here

Figure 15 near here

POLICY RECOMMENDATIONS AND CONCLUSIONS

Policy to rectify gender inequalities via direct or indirect taxation can be of two broad types. Some attempt to make the distributional impact of such taxation fairer in order to reduce gender inequalities between and within households. Others aim to produce behavioural change in order to transform existing gender inequalities.

Unfortunately in some cases these two aims are in conflict. Tax changes that incentivise behaviour, such as labor market engagement, which is currently disproportionately carried out by men, can be expected to have a current distributional impact that favours men. But by making employment more worthwhile for women such tax changes may help them break out of existing gender roles and thus be an important step in transforming existing gender inequalities.

This dilemma disappears when we consider tax changes to incentivise activities currently carried out more by women, such as caregiving, or discouraging harmful social or environmental behaviour in which men engage more than women, such as car driving. The current distributional effect of such tax changes should favour women. This suggests that to remove such dilemmas, transformational policies might be better targeted at changing the behaviour of men than women.

This suggests that taxation alone may not be the best tool to achieve these goals, but should be combined with other policy changes, discussed below. Nevertheless,

changes to some features of the UK tax system may still be a useful contribution to such policy changes.

Personal Income Tax

In order to create a personal income tax system in the UK that provides fiscal autonomy to both members of couples, that is, truly independent taxation for each individual, the system of tax credits must be revised. Tax credits could be removed from the tax system and transferred to the benefit system. However, as long as those credits/benefits are assessed on a household basis (and also to some extent means-tested), they carry employment disincentives for second earners and thus may also reinforce an unequal division of caring responsibilities. Non-targeted (non means-tested) child benefit would therefore be more appropriate. However, raising this to a level sufficient to compensate the poorest families for the loss of tax credits would require considerably greater expenditure.

To remove the implicit gender biases of the current tax system, it would be best to have a more progressive income tax system that raises sufficient revenue to permit all benefits and allowances to be provided on a non-means-tested basis. Removing household means-testing would abolish the disincentive problems it causes for second earners but finding it by more progressive taxation would allow the overall system to remain adequately redistributive. Such a system would involve substantial redistribution among those with higher incomes, towards those who would now qualify for benefits and allowances (parents, the disabled etc), along with considerable spending levels and higher tax for all the better off. It would therefore take a considerable change in attitudes to make this politically feasible. However, as long as the gender pay gap remains, a more progressive income tax system would also reduce gender inequalities.

Indirect Taxation

The UK must have one of the world's few expenditure tax systems with an explicit gender content. VAT was removed from female sanitary products because it was thought unfair to tax these gender specific necessities. Expenditure taxes also have some hidden gender biases, but these largely come through the presence of children. Because many products consumed by children are zero-rated for VAT and children are counted in our analysis equivalently to adults, the presence of children reduces the incidence of VAT. Indirectly this reduces the incidence of VAT on households with women members since they are somewhat more likely than men to live with children, though incidence is lowest on male breadwinner households, who have the most children.

For indirect taxes we have only been able to consider inter-household distributional aspects of gender inequality. Like all indirect tax systems, the UK system is regressive with respect to income, but the regressivity of VAT is reduced because most foods and children's clothing are zero-rated. For this reason, zero-rating 'merit' basic goods such as food and children's clothing should remain, but zero rating should not be extended to sugar products and confectionary, the consumption of which is highest among poor households and those with more women and children. Measures other than removing the tax on these items, such as reforming the tax credit system

perhaps, should be used to boost the income of these households and encourage healthier eating.

The above simulations showed that without accounting for possible behavioural change, increasing the fuel levy would have the greatest impact on households in which there is a male earner. It would also impact disproportionately on lower quintiles. A gender-impact analysis therefore adds additional support to environmental and other arguments for an increase in fuel taxes. Despite inevitable protest, the government should reinstate the automatic system by which fuel tax rose annually, provided this is supported by extensive improvements to the public transport system, which women use far more than men (Hamilton et al. 2002). Policies should also be introduced to reduce the extent of long-distance commuting in the UK, which must restrict men's ability to participate in caring for their children. This would be a case of using the indirect taxation system to effect a change in the behaviour of men. However, if an increase in fuel levy proved ineffective in discouraging car use, it would squeeze the budgets of some of the poorest households and might reduce the well-being of all household members, including women and children.

The UK is unique among the countries looked at in this volume in that tobacco tax has a higher incidence on the households in which women predominate, poorer female-breadwinner households and those with no one employed, which include many single mothers. We do not think an appropriate response to this would be to lower tobacco taxes; indeed price has been shown to be effective in cutting tobacco use so tax should continue to be raised, provided other measures are taken to boost the income of these households. Understanding how such households would respond to increases in tobacco tax rates is needed before drawing further conclusions, though obviously other methods of discouraging tobacco consumption, especially by mothers, should be tried. Our analysis of the impact of tobacco tax suggests that anti-smoking programmes need to be better targeted on members of such households, particularly those with children.

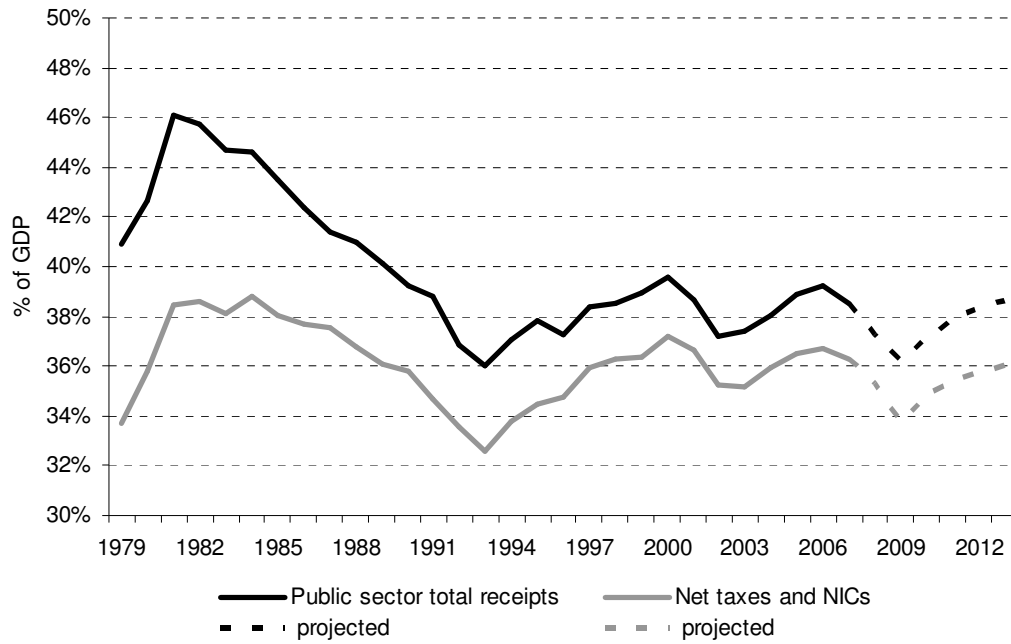
The incidence of alcohol duties is highest in middle quintiles, suggesting that there may be a degree to which consumption responds to prices, and is slightly higher on households with a majority of men (Santos 2009). The UK has a well-known problem with alcohol abuse, especially among the young, to combat which the Chief Medical Officer has suggested a minimum price per unit at which it can be sold (Donaldson 2009). This suggests that the present policy of raising alcohol taxes each year should be continued, together with other programmes to discourage consumption.

In the UK at least, policies other than the tax system could prove more effective in transforming gender roles and outcomes, particularly in conjunction with tax reforms. We suggest that improvements in public transport and in programmes to reduce alcohol abuse and female smoking should be adopted to reinforce any tax changes. Similarly improving childcare affordability and availability, reducing gender wage gaps, and improving the pay and conditions of part-time jobs could be effective in reducing the labor market disincentives that tax credits provide. Deeply entrenched factors affecting gender roles with respect to the labor market and caregiving responsibilities cannot be fully counteracted by the tax system alone.

Indirectly, however, tax reforms could help. As was argued at the beginning of this chapter the overall level of government revenue and spending is itself a gender issue. An important step in achieving a more gender equitable society is therefore a more progressive tax system that would raise greater revenues to fund public services, such as high-quality child and elder care, well-funded family-friendly policies (e.g., well-paid parental leave and limited working hours), good quality education and training, efficient and affordable public transport and effective equal opportunities monitoring, needed to support the creation of a more gender-equal labor market and remove wider gender inequalities in society.

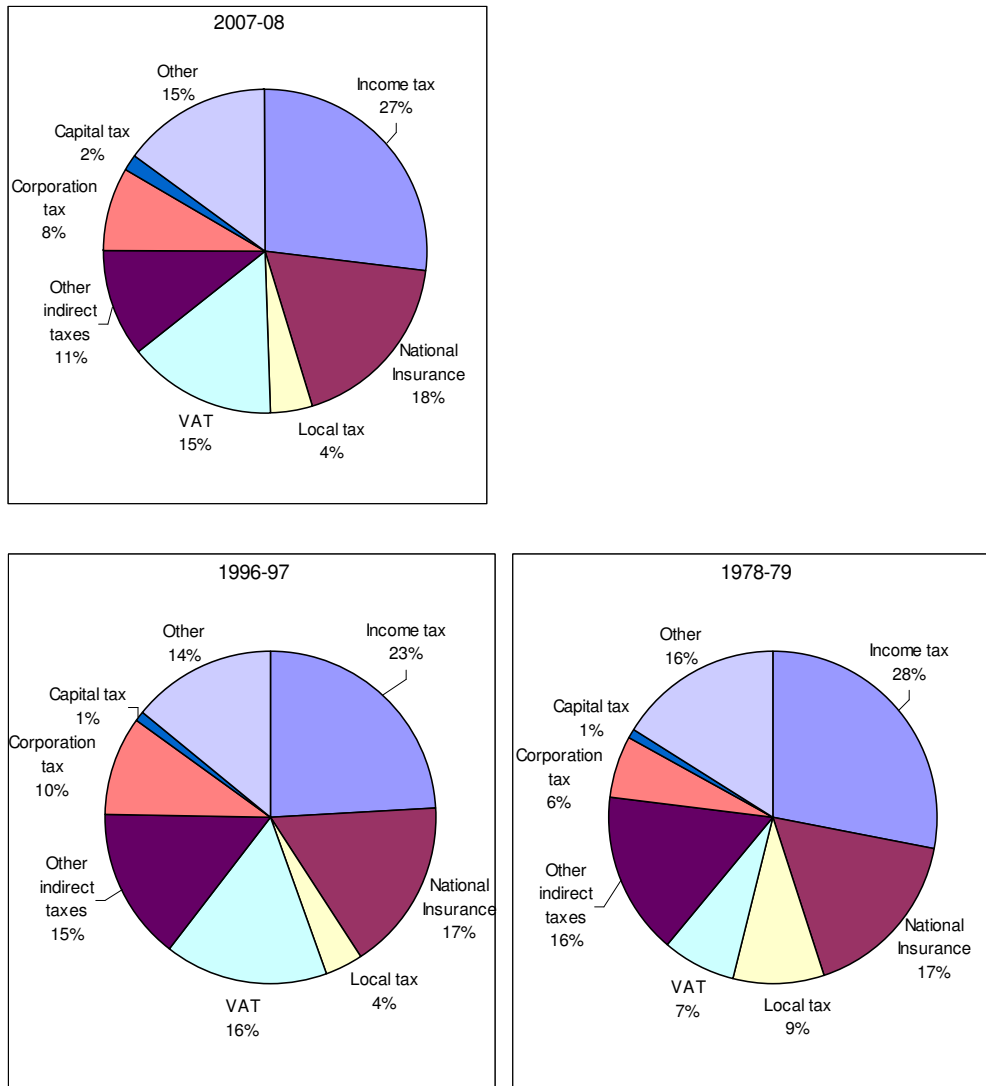
Tables and figures, Chapter 9, UK

Figure 1 Total government receipts and taxes (including national insurance contributions) as a percentage of GDP 1978-79 to 2007-08 plus projections to 2013-14



Source: HM Treasury (2008).

Figure 2 Composition of UK government current receipts (2007-08, 1996-97 and 1978-79)



Note: 'VAT' stands for Value Added Tax.

Source: based on HM Treasury (2008, 1997) and Adam and Browne (2006).

Table 1 PIT bands and rates by source of income (tax year 2008-2009)

Income bands (GBP)		Rates for		
		Savings	Dividends	Other income
0-2,230	starting	10%	10%	20%
2,231-34,800	basic	20%	10%	20%
>34,800	higher	40%	32.5%	40%

Source: HM Treasury (2008).

Table 2 Main taxable personal income, exemptions and reductions (2008-09)

Taxable income	Exemptions	Deductions and reductions of taxable income	Reductions of tax liability (tax credits)
<ul style="list-style-type: none"> - Earnings from employment, self-employment and non-incorporated businesses - Retirement pensions - Income from property (rents) - Interests on savings - Dividends on shares - Non-means tested benefits as replacement income (state pension, job seeker's allowance) 	<ul style="list-style-type: none"> - Means-tested social security benefits - Child benefits - Income from certain savings and dividends (National Savings Certificates, Individual Savings Accounts) 	<ul style="list-style-type: none"> - Contributions to occupational pensions by employee and employer - Professional expenses (e.g. professional fees and subscriptions, tools and specialist clothing, capital allowances, household expenses for working at home, travel and subsistence costs) - Childcare expenses supported by employer (up to a limit of GBP 55 a week, worth a quarter of the cost of an average childcare centre place) - Personal tax allowance (GBP 6,035 – about a quarter of median household income); further reductions available to elderly and/or disabled people, up to a certain limit 	<ul style="list-style-type: none"> - Non-refundable tax credit on dividends - Non-refundable tax credit for donation to charities - Refundable, means-tested (on family income), child and working tax credits (see details in the text)

Table 3 Tax incidence (income tax + National Insurance Contributions – tax credits) as a proportion of gross household income – couple with 2 dependent children

	Female share of total gross household income	Total household tax incidence (tax + NICs)	Total household tax incidence (tax + NICs - tax credits)	Female share of total net household income	Total male incidence	Total female incidence
Half median income (£11,518)						
(i) male higher income	33.3%	5.0%	-56.1%	47.6%	-15.1%	-40.9%
(ii) male sole earner	0.0%	15.3%	-45.7%	28.1%	-4.8%	-40.9%
(iiia) female sole earner	100.0%	15.3%	-45.7%	71.9%	-40.9%	-4.8%
(iiib) female sole earner-carer	100.0%	15.3%	-45.7%	100.0%	0.0%	-45.7%
Median income (£23,036)						
(i) male higher income	33.3%	15.3%	4.3%	43.7%	12.8%	-8.5%
(ii) male sole earner	0.0%	23.2%	12.1%	12.5%	23.2%	-11.0%
(iiia) female sole earner	100.0%	23.2%	12.1%	87.5%	-11.0%	23.2%
(iiib) female sole earner-carer	100.0%	23.2%	12.1%	100.0%	0.0%	12.1%
Twice median income (£46,072)						
(i) male higher income	33.3%	23.2%	22.0%	36.0%	16.7%	5.2%
(iia) male sole earner	0.0%	27.9%	26.7%	1.6%	27.9%	-1.2%
(iiia) female sole earner	100.0%	27.9%	26.7%	98.4%	-1.2%	27.9%
(iiib) female sole earner-carer	100.0%	27.9%	26.7%	100.0%	0.0%	26.7%

Source: own calculations using 2008-2009 tax rules.

Table 4 VAT rates and liable goods at April 2005

VAT rate	Applied to
17.5%	Most goods supplied within the UK (standard rate)
5%	Domestic fuel, “good practice” goods or services (e.g. installation of energy saving materials, renovation and alteration of dwellings, installation of heating equipment, security goods or connection of gas supply), women’s sanitary products and to children’s car seats
0%	Most food, children’s clothing and footwear, public transport, books and newspapers, water and sewerage services and helmets for motorcycles and pedal cycles
Exemptions	Financial and banking services, private education and health (exc. spectacles, lenses, sunglasses, most mobility and hearing equipment and non-NHS medical products and services), postal charges, betting and funerals

Source: HMRC (2007).

Table 5 Excisable goods: incidence of duty and tax for typical items at April 2005
(pence)

Item	Retail price	Excise duty	VAT	Total tax	Total tax as percentage of price
Packet of 20 cigarettes ^(a)	498	314	74	386	78
Pint of beer (bitter) in on-licensed premises ^(b)	209	29	31	60	29
Pint of lager in on-licensed premises ^(c)	228	30	34	64	28
4 large (440 ml) cans of lager in retail outlet ^(c)	276	93	41	134	49
75cl bottle of table wine in retail outlet	333	126	50	175	53
70cl bottle of whisky in retail outlet ^(d)	1171	548	174	722	62
75cl bottle of vodka in retail outlet ^(d)	1088	550	162	712	66
Litre bottle of cider in retail outlet ^(e)	175	26	26	52	30
Litre of ultra low sulphur petrol	85	47	13	60	70
Litre of ultra low sulphur diesel	90	47	13	60	67

Notes:

(a) Excise duty consists of 204.78 pence in specific duty and 109.56 pence in ad valorem

(b) Typical strength of 3.9% alcohol by volume

(c) Typical strength of 4.1% alcohol by volume

(d) Strength of 40% alcohol by volume

(e) Typical strength of less than 7.5% alcohol by volume

Source: HMCE (2005), Table D1.

Table 6 Overall Incidence by Household types (tax as a percentage of expenditure)

	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
Headship					
Female headed	11.37	7.34	3.97	2.02	2639
Male headed	11.56	7.53	3.94	2.43	4145
Employment Categories					
Male breadwinner	10.99	7.04	3.84	2.31	1171
Female breadwinner	11.21	7.31	3.77	2.19	902
Dual earner	11.91	7.84	4.05	2.57	2051
No-one employed	12.27	7.78	4.34	2.15	1163
Household Sex Composition					
Adult male majority	12.32	7.47	4.71	2.67	1349
Adult female majority	11.41	7.40	3.95	2.18	2010
Equal # females & males	11.32	7.50	3.74	2.26	3425

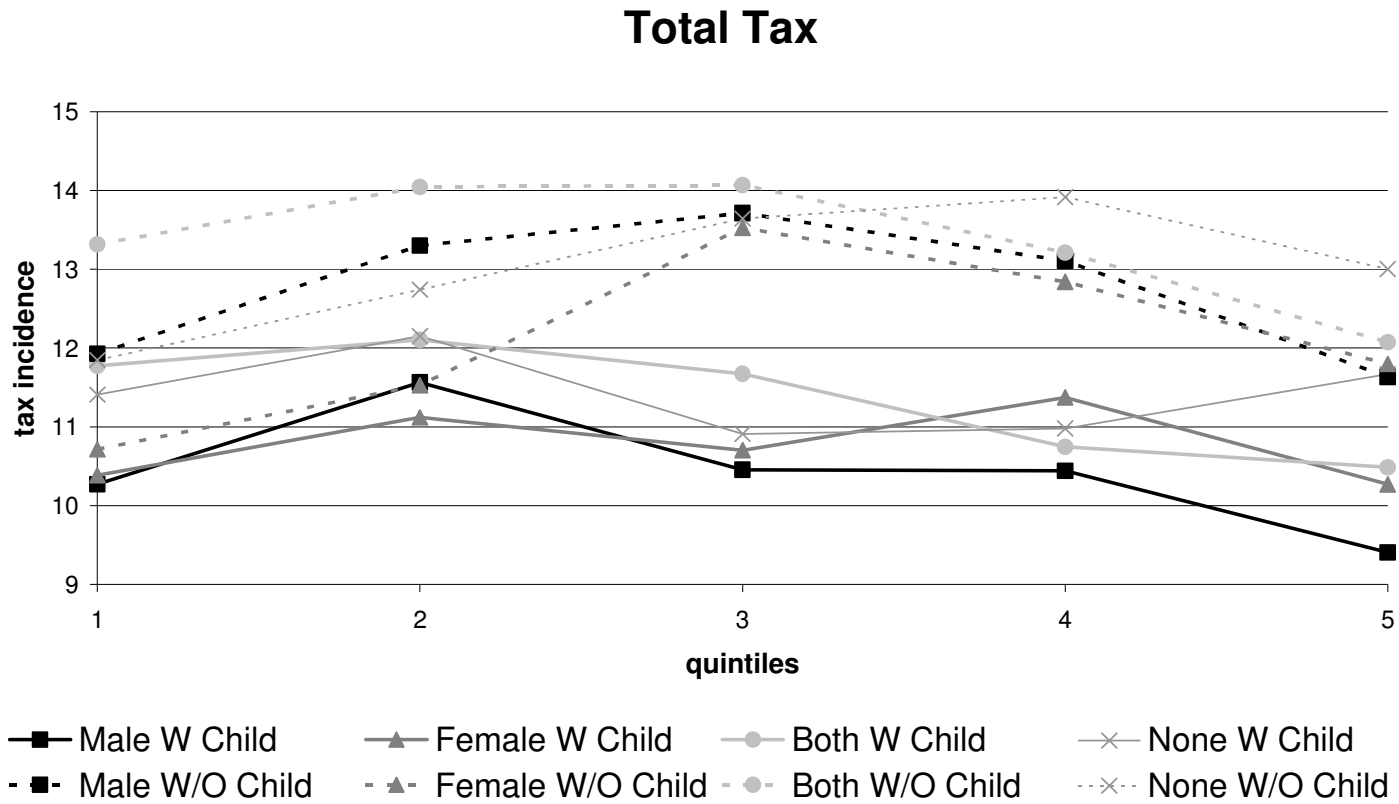
Source: own calculations based on EFS 2005-2006.

Table 7 Incidence by employment status, presence of children and quintiles

	Total Tax	VAT	Excises	Fuel	Total Tax	VAT	Excises	Fuel	Total Tax	VAT	Excises	Fuel
	Male Breadwinner				Male Breadwinner with children				Male Breadwinner without children			
Quintile 1	10.40	6.21	4.06	2.63	10.27	6.20	3.88	2.52	11.93	6.21	6.33	4.01
Quintile 2	11.86	7.29	4.50	2.59	11.56	7.29	4.21	2.50	13.30	7.31	5.88	3.07
Quintile 3	11.23	7.38	3.70	2.36	10.46	7.22	3.09	2.12	13.71	7.94	5.65	3.15
Quintile 4	11.38	7.46	3.77	2.15	10.44	7.16	3.17	1.92	13.11	8.07	4.85	2.59
Quintile 5	10.34	7.41	2.92	1.53	9.40	6.68	2.53	1.28	11.63	8.32	3.48	1.88
Total	10.99	7.04	3.84	2.31	10.50	6.81	3.54	2.20	12.65	7.85	4.84	2.66
	Female Breadwinner				Female Breadwinner with children				Female Breadwinner without children			
Quintile 1	10.41	6.40	3.85	2.30	10.38	6.42	3.80	2.20	10.71	6.27	4.38	3.44
Quintile 2	11.21	7.06	3.99	2.28	11.12	7.16	3.83	2.22	11.53	6.77	4.53	2.46
Quintile 3	11.41	7.40	3.81	2.13	10.65	7.27	3.11	1.92	13.53	7.76	5.73	2.73
Quintile 4	12.09	8.26	3.90	2.32	11.37	8.03	3.31	2.06	12.84	8.54	4.52	2.59
Quintile 5	11.23	8.26	2.95	1.76	10.27	7.95	2.00	1.42	11.80	8.43	3.51	1.96
Total	11.20	7.31	3.76	2.19	10.75	7.09	3.47	2.07	12.28	7.84	4.45	2.47
	Dual earner				Dual earner with children				Dual earner without children			
Quintile 1	11.91	7.12	4.75	3.44	11.77	7.10	4.62	3.30	13.32	7.34	6.23	4.96
Quintile 2	12.52	7.65	4.81	2.83	12.10	7.67	4.37	2.68	14.04	7.59	6.44	3.36
Quintile 3	12.31	8.00	4.35	2.72	11.67	7.78	3.93	2.59	14.07	8.58	5.48	3.09
Quintile 4	11.59	7.88	3.62	2.27	10.75	7.58	3.05	1.99	13.21	8.53	4.74	2.82
Quintile 5	11.24	8.27	3.05	1.96	10.49	7.97	2.55	1.58	12.07	8.58	3.59	2.38
Total	11.91	7.84	4.05	2.57	11.39	7.62	3.73	2.44	13.13	8.37	4.80	2.88
	No-one employed				No-one employed with children				No-one employed without children			
Quintile 1	11.55	6.68	4.77	2.22	11.41	6.68	4.65	1.98	11.85	6.68	5.01	2.69
Quintile 2	12.48	7.82	4.51	2.10	12.15	7.62	4.23	1.65	12.74	7.96	4.73	2.46
Quintile 3	12.93	8.75	4.08	2.35	10.91	8.10	2.52	1.17	13.64	8.97	4.62	2.76
Quintile 4	13.33	9.30	3.79	2.19	10.98	7.76	2.83	1.52	13.92	9.69	4.03	2.35
Quintile 5	12.76	9.82	2.87	1.59	11.67	9.03	2.54	1.99	13.00	10.02	2.95	1.50
Total	12.27	7.78	4.34	2.15	11.54	7.15	4.22	1.82	12.91	8.30	4.45	2.44

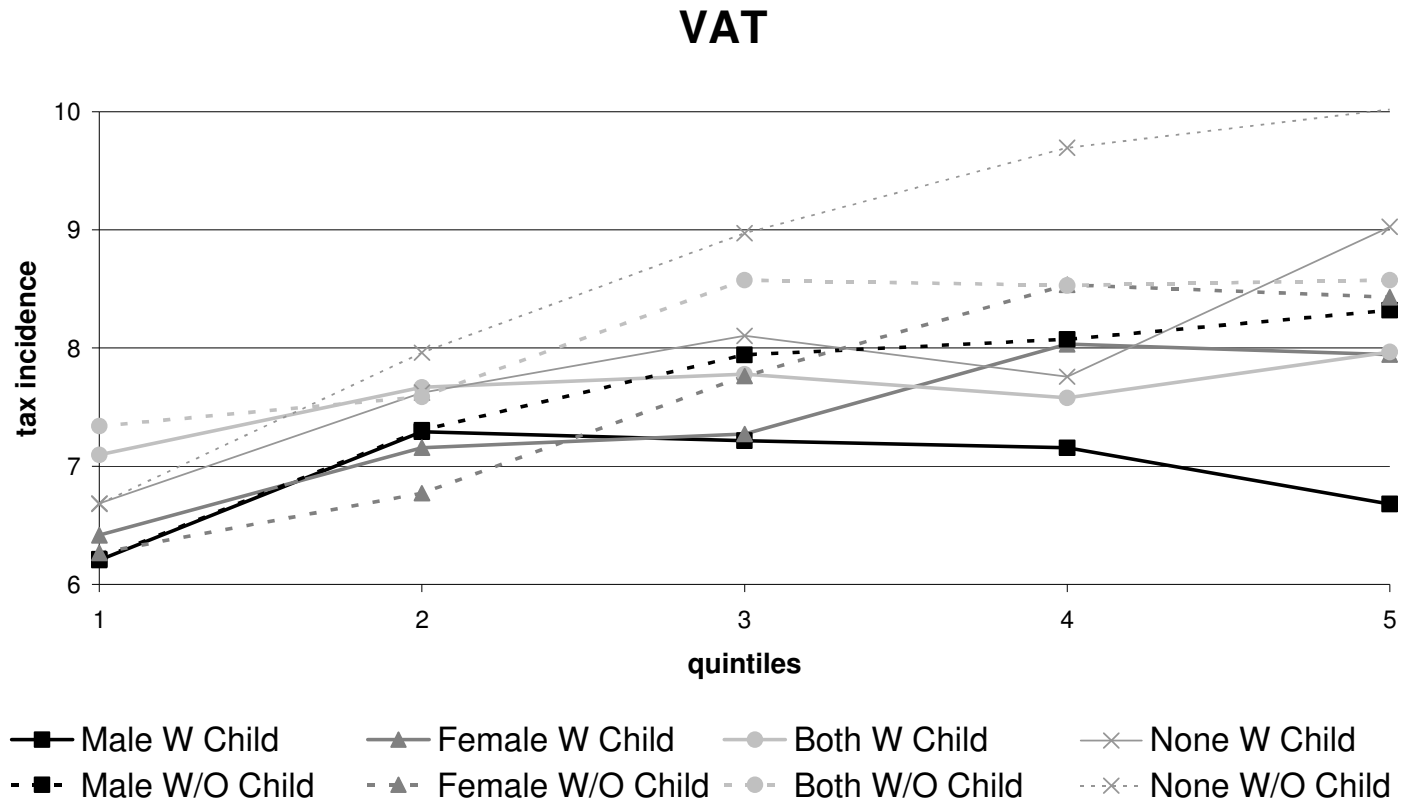
Source: own calculations based on EFS 2005-2006.

Figure 3 Total Tax Incidence by Household Employment Status and Children



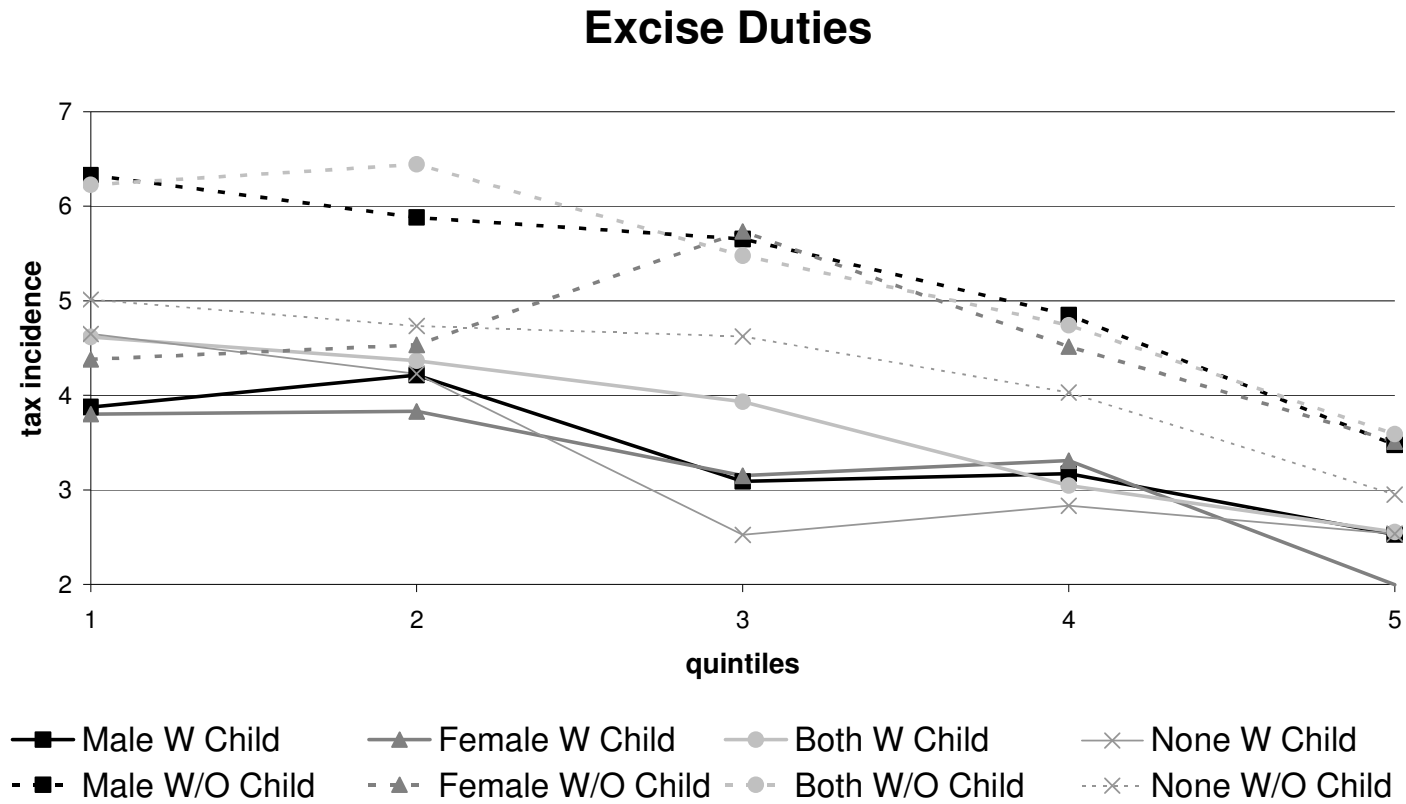
Source: own calculations based on EFS 2005-2006.

Figure 4 VAT Incidence by Household Employment Status and Children



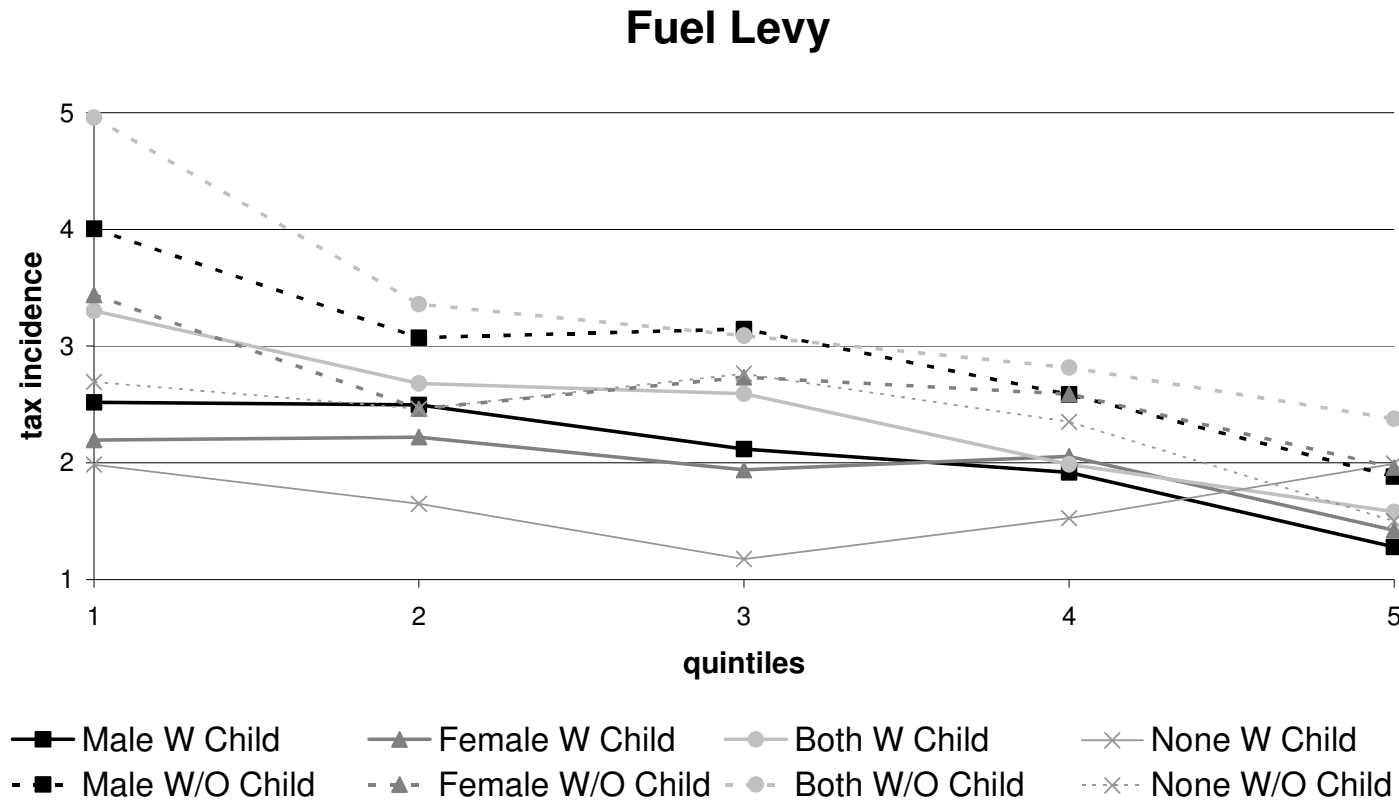
Source: own calculations based on EFS 2005-2006.

Figure 5 Excise Duty Incidence by Household Employment Status and Children



Source: own calculations based on EFS 2005-2006.

Figure 6 Fuel Levy Incidence by Household Employment Status and Children



Source: own calculations based on EFS 2005-2006.

Table 8 Tax incidence for main commodity groups by employment status and quintiles

Categories	Male Breadwinner						Female Breadwinner					
	Q1	Q2	Q3	Q4	Q5	Total	Q1	Q2	Q3	Q4	Q5	Total
<i>Food subtotal</i>	0.13	0.12	0.08	0.06	0.06	0.10	0.14	0.12	0.07	0.08	0.03	0.10
*Basic unprocessed	0	0	0	0	0	0	0	0	0	0	0	0
*Basic processed	0	0	0	0	0	0	0	0	0	0	0	0
*Sugar/confectionary and others	0.13	0.12	0.08	0.06	0.06	0.10	0.14	0.12	0.07	0.08	0.03	0.10
Meals out	0.63	0.70	0.63	0.56	0.53	0.61	0.62	0.76	0.58	0.60	0.39	0.61
Non-alcoholic beverages	0.17	0.13	0.10	0.08	0.06	0.12	0.16	0.16	0.12	0.09	0.05	0.13
<i>Alcoholic beverages subtotal</i>	0.69	1.04	1.23	1.23	0.98	0.99	0.65	0.92	1.21	1.20	0.93	0.96
*Beer and Cider	0.32	0.45	0.44	0.40	0.26	0.37	0.17	0.24	0.26	0.30	0.18	0.23
*Spirits	0.19	0.34	0.29	0.35	0.23	0.27	0.22	0.32	0.54	0.47	0.27	0.36
*Wine	0.19	0.25	0.50	0.48	0.48	0.35	0.27	0.36	0.42	0.43	0.48	0.38
Tobacco	1.13	1.43	0.58	0.73	0.35	0.90	1.30	1.26	0.99	0.74	0.43	1.01
<i>Clothing and footwear subtotal</i>	0.29	0.62	0.46	0.43	0.46	0.44	0.49	0.67	0.59	0.64	0.55	0.59
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0
*Adult clothing	0.29	0.62	0.46	0.43	0.46	0.44	0.49	0.67	0.59	0.64	0.55	0.59
<i>Housing, Water, Electricity, Gas Subtotal</i>	0.37	0.50	0.58	0.94	1.32	0.69	0.55	0.44	0.54	0.62	1.63	0.68
*Housing	0.19	0.37	0.48	0.83	1.24	0.57	0.35	0.29	0.40	0.49	1.54	0.53
*Water	0	0	0	0	0	0	0	0	0	0	0	0
*Electricity	0.09	0.07	0.06	0.05	0.04	0.07	0.12	0.08	0.08	0.06	0.05	0.08
*Gas	0.08	0.06	0.05	0.05	0.03	0.06	0.08	0.07	0.07	0.06	0.04	0.07
*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use	0.05	0.02	0.02	0.01	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.02
Furniture, HH Equipment and Maintenance	0.49	0.53	0.68	0.73	0.82	0.63	0.73	0.50	0.85	0.74	1.05	0.75
Domestic and household services	0.01	0.02	0.01	0.03	0.05	0.02	0.00	0.02	0.04	0.06	0.11	0.04
Health	0.05	0.08	0.05	0.07	0.06	0.06	0.03	0.07	0.18	0.15	0.06	0.10
<i>Transportation Subtotal</i>	1.43	1.30	1.58	1.73	1.94	1.57	0.84	1.31	1.31	1.71	1.60	1.30
*Collective forms of transport	0.28	0.17	0.14	0.21	0.15	0.20	0.22	0.16	0.15	0.22	0.12	0.18
*Flights	0.04	0.06	0.05	0.17	0.45	0.14	0.00	0.02	0.03	0.13	0.18	0.06
*Private Transport	1.11	1.07	1.39	1.35	1.34	1.23	0.62	1.13	1.13	1.35	1.30	1.06
School Transport	0	0	0	0	0	0	0	0	0	0	0	0

Fuel for transport	2.97	3.07	2.81	2.47	1.75	2.67	2.63	2.68	2.54	2.65	2.08	2.55
Communication	0.57	0.49	0.32	0.30	0.22	0.40	0.56	0.51	0.39	0.40	0.30	0.45
Recreation	0.89	1.31	1.53	1.45	1.31	1.25	1.03	1.14	1.34	1.74	1.57	1.31
Education	0	0	0	0	0	0	0	0	0	0	0	0
<i>Personal care subtotal</i>	0.33	0.32	0.35	0.29	0.22	0.30	0.27	0.33	0.33	0.40	0.26	0.32
*Necessities	0.09	0.10	0.09	0.08	0.05	0.08	0.11	0.12	0.13	0.10	0.06	0.11
*Baby products	0.09	0.06	0.05	0.05	0.02	0.06	0.04	0.01	0.01	0.01	0.00	0.02
*Other	0.14	0.16	0.20	0.16	0.14	0.16	0.12	0.21	0.19	0.29	0.19	0.19
Gambling	0.05	0.06	0.07	0.06	0.02	0.05	0.07	0.07	0.04	0.05	0.03	0.06
Miscellaneous	0.15	0.13	0.15	0.22	0.18	0.16	0.28	0.21	0.33	0.21	0.14	0.24
TOTAL	10.40	11.86	11.23	11.38	10.34	10.99	10.41	11.21	11.46	12.09	11.23	11.21
Number of Households	160	177	194	259	381	1171	94	153	172	207	276	902

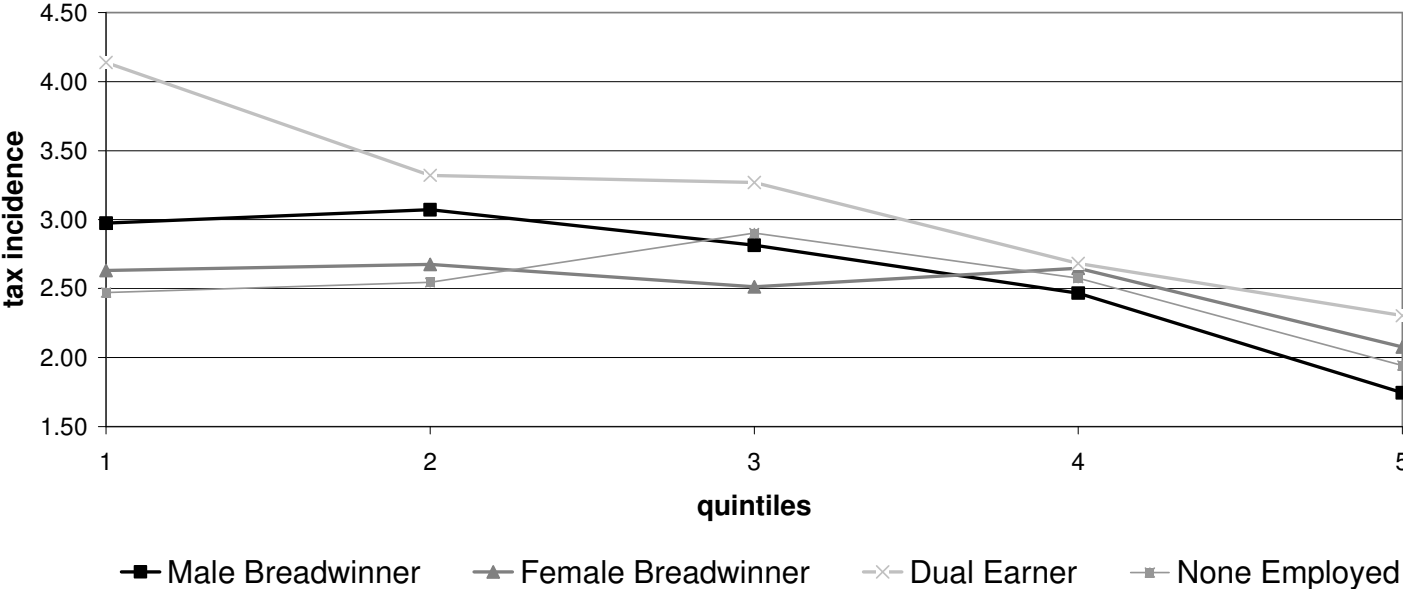
Categories	Dual Earner						None Employed					
	Q1	Q2	Q3	Q4	Q5	Total	Q1	Q2	Q3	Q4	Q5	Total
<i>Food subtotal</i>	0.13	0.10	0.08	0.06	0.04	0.08	0.13	0.14	0.10	0.07	0.04	0.12
*Basic unprocessed	0	0	0	0	0	0	0	0	0	0	0	0
*Basic processed	0	0	0	0	0	0	0	0	0	0	0	0
*Sugar/confectionary and others	0.13	0.10	0.08	0.06	0.04	0.08	0.13	0.14	0.10	0.07	0.04	0.12
Meals out	0.72	0.74	0.75	0.65	0.55	0.68	0.66	0.72	0.68	0.67	0.42	0.66
Non-alcoholic beverages	0.16	0.12	0.10	0.08	0.05	0.10	0.20	0.13	0.12	0.07	0.05	0.14
<i>Alcoholic beverages subtotal</i>	0.96	1.55	1.44	1.29	1.00	1.27	0.94	1.45	1.37	1.47	1.13	1.21
*Beer and Cider	0.33	0.62	0.49	0.43	0.27	0.43	0.34	0.49	0.38	0.32	0.18	0.37
*Spirits	0.28	0.47	0.39	0.32	0.26	0.35	0.40	0.59	0.40	0.41	0.28	0.44
*Wine	0.35	0.45	0.56	0.54	0.47	0.49	0.20	0.37	0.59	0.74	0.67	0.40
Tobacco	0.79	1.09	0.76	0.55	0.23	0.67	2.30	1.59	0.89	0.51	0.25	1.56
<i>Clothing and footwear subtotal</i>	0.58	0.59	0.60	0.57	0.53	0.57	0.65	0.62	0.85	0.71	0.60	0.67
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0
*Adult clothing	0.58	0.59	0.60	0.57	0.53	0.57	0.65	0.62	0.85	0.71	0.60	0.67
<i>Housing, Water, Electricity, Gas Subtotal</i>	0.40	0.52	0.60	0.72	1.38	0.75	0.45	0.62	1.05	1.24	1.78	0.77
*Housing	0.19	0.38	0.48	0.63	1.31	0.63	0.24	0.44	0.88	1.11	1.69	0.59

	*Water	0	0	0	0	0	0	0	0	0	0	0	0
	*Electricity	0.12	0.08	0.06	0.05	0.04	0.06	0.12	0.09	0.09	0.07	0.05	0.10
	*Gas	0.09	0.06	0.05	0.04	0.03	0.05	0.10	0.08	0.08	0.06	0.04	0.08
	*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use		0.02	0.03	0.02	0.01	0.01	0.02	0.03	0.02	0.02	0.01	0.02	0.03
Furniture, HH Equipment and Maintenance		0.43	0.63	0.67	0.78	0.76	0.68	0.58	0.86	1.02	1.13	1.23	0.83
Domestic and household services		0.01	0.02	0.01	0.03	0.11	0.04	0.01	0.03	0.03	0.07	0.10	0.03
Health		0.05	0.08	0.06	0.10	0.07	0.07	0.07	0.07	0.21	0.17	0.15	0.11
<i>Transportation Subtotal</i>		1.31	1.35	1.59	1.48	1.80	1.53	1.05	1.23	1.09	2.01	2.05	1.29
	*Collective forms of transport	0.17	0.20	0.14	0.15	0.14	0.16	0.27	0.09	0.06	0.15	0.06	0.16
	*Flights	0.00	0.06	0.03	0.05	0.22	0.08	0.00	0.06	0.00	0.12	0.28	0.05
	*Private Transport	1.14	1.08	1.42	1.28	1.44	1.29	0.78	1.08	1.04	1.74	1.72	1.07
School Transport		0	0	0	0	0	0	0	0	0	0	0	0
Fuel for transport		4.14	3.32	3.27	2.68	2.30	3.05	2.47	2.54	2.90	2.57	1.94	2.52
Communication		0.49	0.46	0.39	0.31	0.23	0.36	0.51	0.45	0.33	0.31	0.23	0.42
Recreation		1.16	1.25	1.40	1.61	1.56	1.42	0.96	1.42	1.67	1.65	2.09	1.35
Education		0	0	0	0	0	0	0	0	0	0	0	0
<i>Personal care subtotal</i>		0.31	0.30	0.30	0.32	0.25	0.30	0.34	0.33	0.34	0.36	0.25	0.33
	*Necessities	0.15	0.11	0.10	0.10	0.07	0.10	0.13	0.12	0.12	0.09	0.05	0.12
	*Baby products	0.04	0.03	0.02	0.02	0.01	0.02	0.07	0.03	0.01	0.01	0.00	0.04
	*Other	0.13	0.16	0.18	0.20	0.18	0.18	0.14	0.18	0.21	0.25	0.19	0.18
Gambling		0.06	0.07	0.07	0.04	0.03	0.06	0.10	0.14	0.12	0.09	0.04	0.11
Miscellaneous		0.18	0.32	0.19	0.30	0.34	0.27	0.08	0.11	0.13	0.19	0.37	0.13
TOTAL		11.91	12.52	12.31	11.59	11.24	11.91	11.55	12.48	12.93	13.33	12.76	12.27
Number of Households		150	298	438	545	619	2051	341	299	208	173	142	1163

Source: own calculations based on EFS 2005-2006.

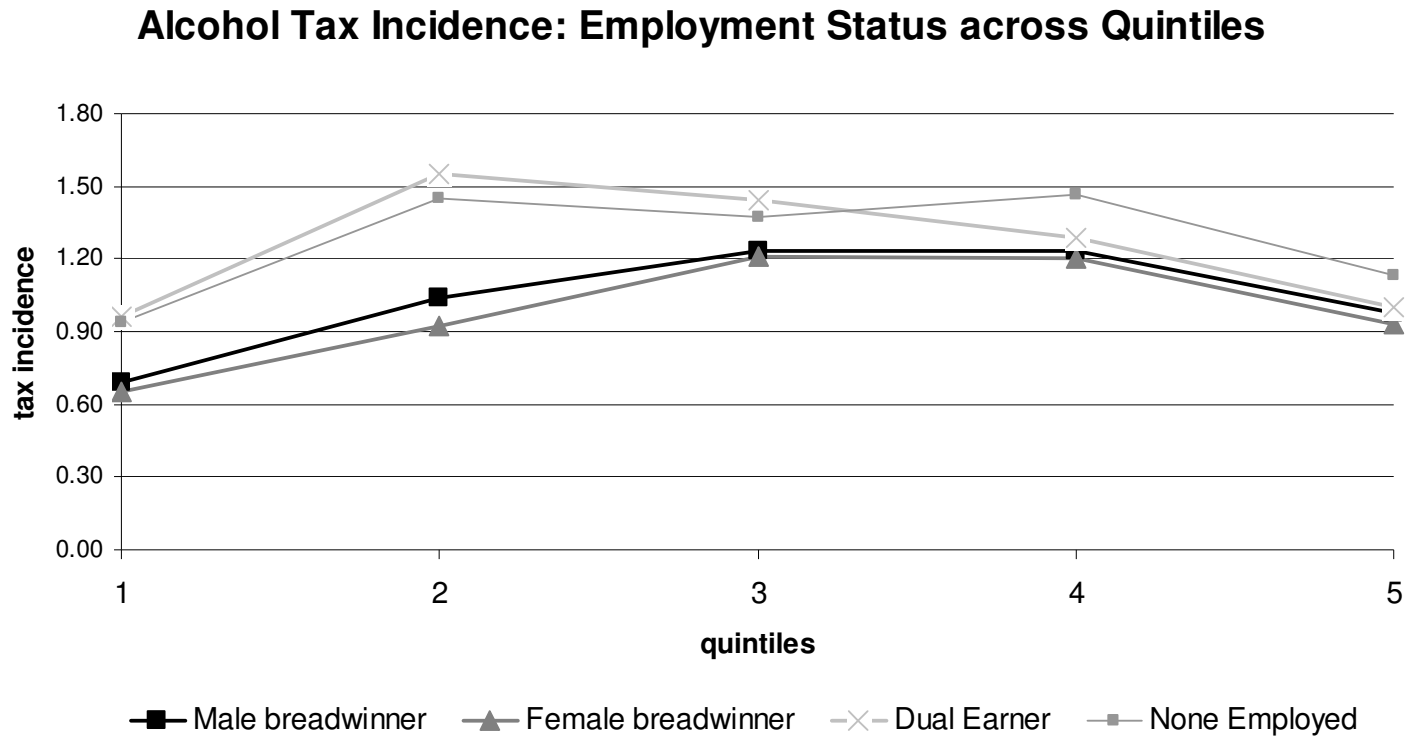
Figure 7 Commodity Incidence by employment status across quintiles – Fuel for Transport

Fuel for Transport Tax Incidence: Employment Status across Quintiles



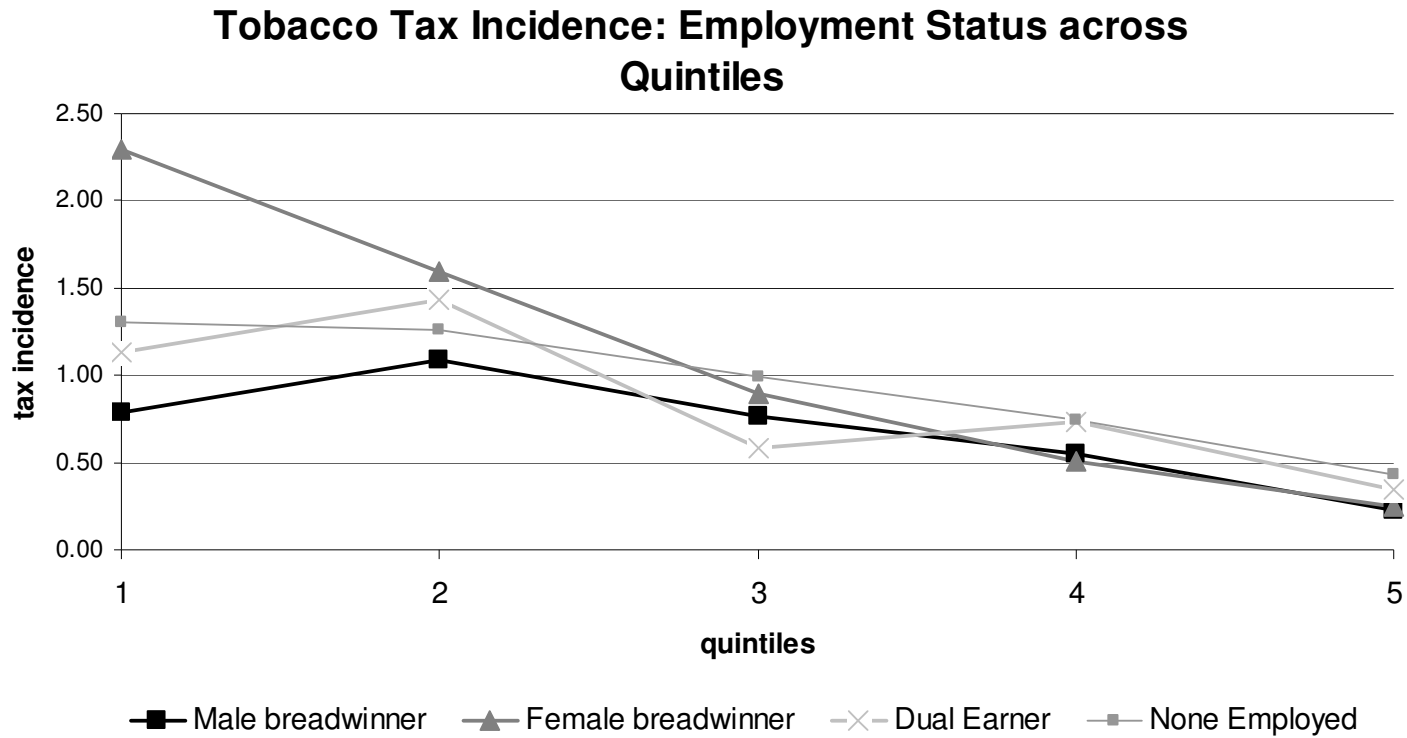
Source: own calculations based on EFS 2005-2006.

Figure 8 Commodity Incidence by employment status across quintiles – Alcohol



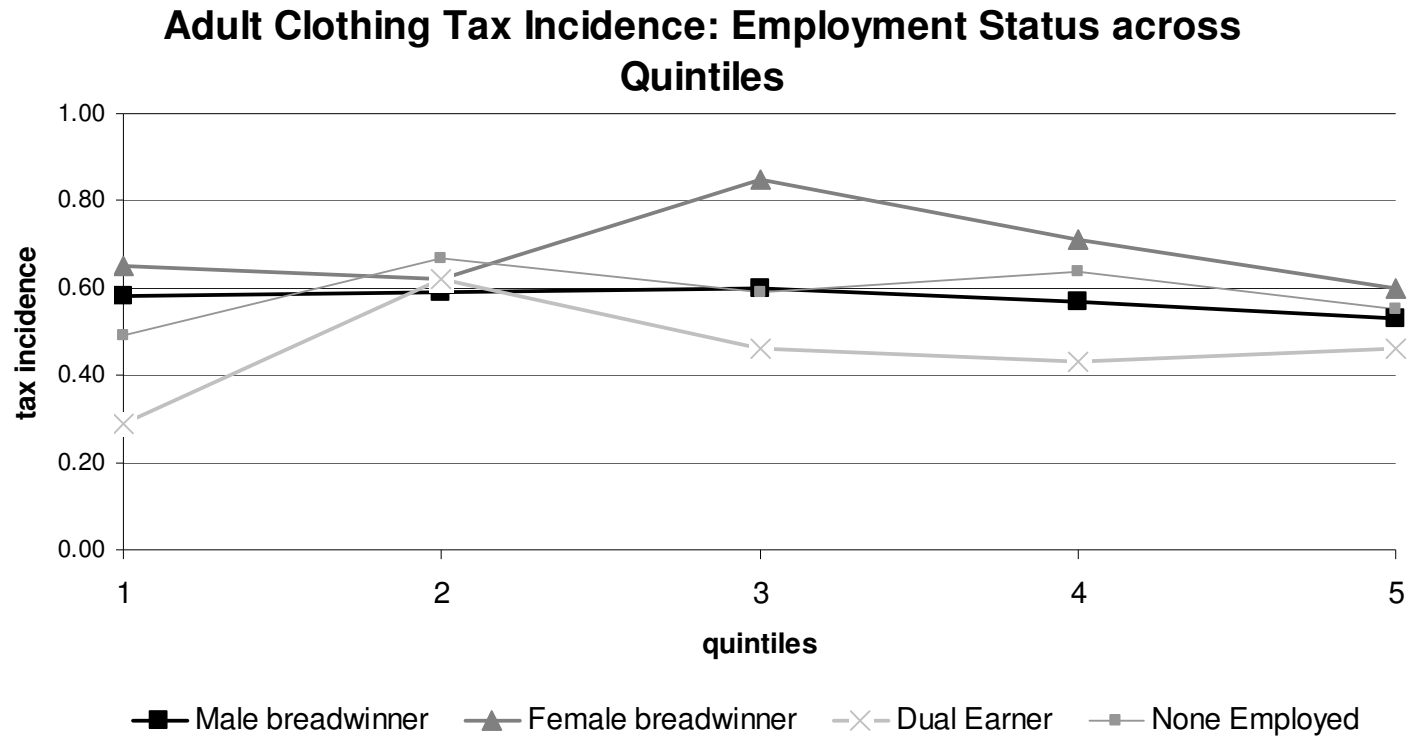
Source: own calculations based on EFS 2005-2006.

Figure 9 Commodity Incidence by employment status across quintiles – Tobacco



Source: own calculations based on EFS 2005-2006.

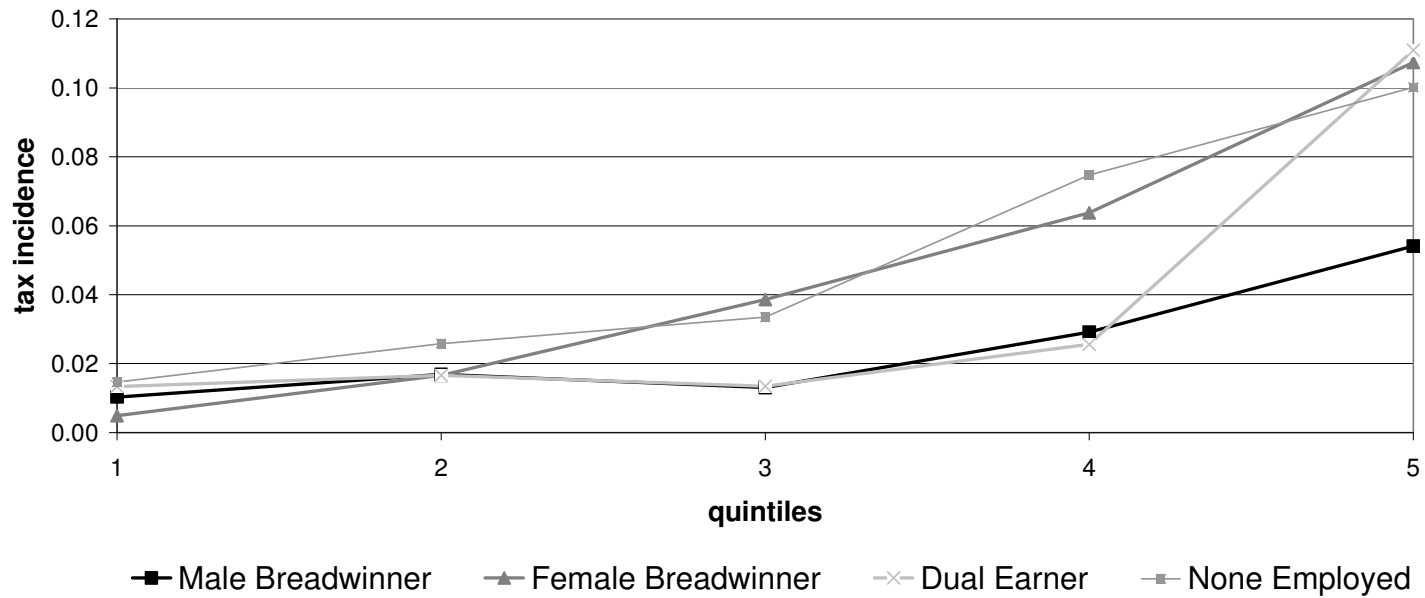
Figure 10 Commodity Incidence by employment status across quintiles – Adult Clothing



Source: own calculations based on EFS 2005-2006.

Figure 11 Commodity Incidence by employment status across quintiles – Domestic Services

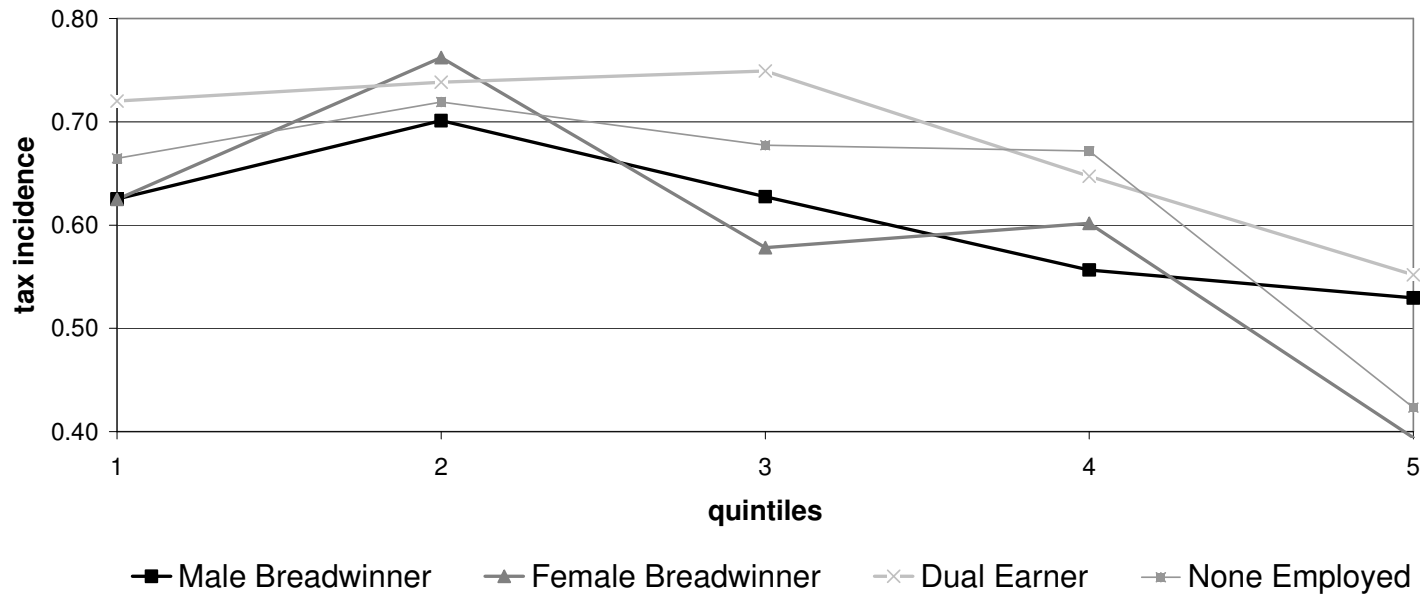
Domestic Services Tax Incidence: Employment Status across Quintiles



Source: own calculations based on EFS 2005-2006.

Figure 12 Commodity Incidence by employment status across quintiles – Meals Out

Meals Out Tax Incidence: Employment Status across Quintiles



Source: own calculations based on EFS 2005-2006.

Table 9 Effects of Changes in Indirect Tax Rates on Tax Incidence by Employment Status and Expenditure Quintile (per cent)

	Average Tax incidence	Percentage change from the base scenario (%)		
	Base scenario	Increasing fuel tax	Standard-rating basic food	Standard-rating all food
All				
Quintile 1	10.74	1.92	17.06	20.40
Quintile 2	11.99	1.74	11.68	14.11
Quintile 3	11.96	1.76	9.54	11.69
Quintile 4	11.74	1.60	7.97	9.83
Quintile 5	11.23	1.40	5.60	6.86
Total	11.00	1.71	10.84	13.13
Male breadwinner				
Quintile 1	10.43	2.15	16.40	19.44
Quintile 2	11.86	1.88	11.06	13.35
Quintile 3	11.23	1.78	10.36	12.80
Quintile 4	11.38	1.62	8.35	10.08
Quintile 5	10.34	1.25	6.31	7.61
Total	11.20	1.79	11.12	13.37
Female breadwinner				
Quintile 1	10.41	1.86	16.06	19.60
Quintile 2	11.21	1.74	12.57	15.62
Quintile 3	11.41	1.60	9.47	11.72
Quintile 4	12.09	1.62	7.71	9.51
Quintile 5	11.23	1.33	5.47	6.65
Total	11.91	1.66	10.88	13.40
Dual earner				
Quintile 1	11.91	2.48	14.35	17.25
Quintile 2	12.52	1.93	10.32	12.53
Quintile 3	12.31	1.87	8.59	10.65
Quintile 4	11.59	1.66	7.57	9.43
Quintile 5	11.25	1.54	5.30	6.62
Total	12.28	1.85	8.79	10.80
None employed				
Quintile 1	11.55	1.63	18.18	21.37
Quintile 2	12.48	1.44	13.37	15.82
Quintile 3	12.94	1.56	11.09	13.06
Quintile 4	13.31	1.39	8.74	10.69
Quintile 5	12.78	1.07	5.99	6.98
Total	11.51	1.49	13.73	16.21
Overall Annual Tax Receipts (1000s GBP)	71,288	72,365	77,112	78,376
Percentage change in revenues from policy (%)		1.51	8.17	9.94

Source: own calculations based on EFS 2005-2006.

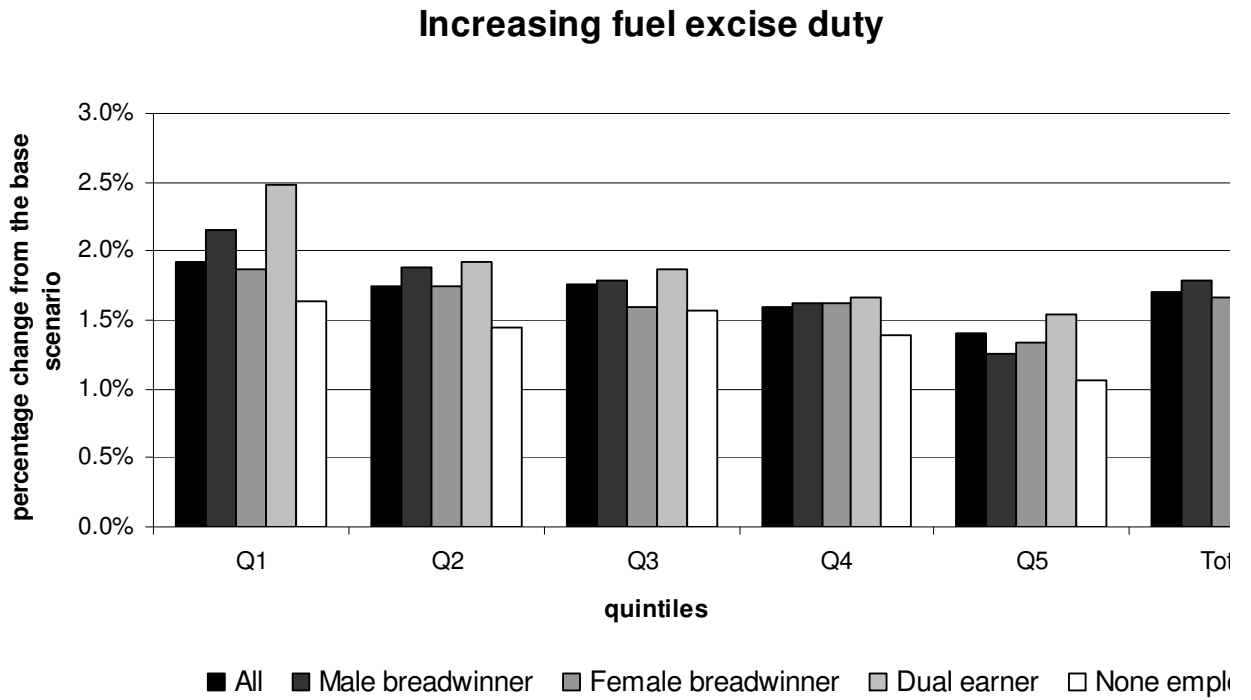
Note: using quarterly weights from the EFS and extrapolating the sample to the whole population.

Table 10 Effects of Government's 2008 stimulus package in Indirect Tax Rates on Tax Incidence by Employment Status and Expenditure Quintile (per cent)

	Average Tax incidence	Percentage change from the base scenario (%)			
	Base scenario	Updating VAT rate to 15%	Increasing alcohol duty	Increasing tobacco duty	Full stimulus package
All					
Quintile 1	10.74	-7.21	0.31	0.35	-6.57
Quintile 2	11.99	-7.54	0.44	0.29	-6.83
Quintile 3	11.96	-7.97	0.48	0.17	-7.33
Quintile 4	11.74	-8.34	0.47	0.14	-7.74
Quintile 5	11.23	-8.93	0.40	0.07	-8.47
Total	11.00	-7.85	0.38	0.21	-7.26
Male breadwinner					
Quintile 1	10.43	-7.25	0.28	0.28	-6.71
Quintile 2	11.86	-7.49	0.34	0.31	-6.85
Quintile 3	11.23	-8.12	0.46	0.13	-7.53
Quintile 4	11.38	-8.11	0.47	0.16	-7.48
Quintile 5	10.34	-8.73	0.43	0.09	-8.22
Total	11.20	-8.00	0.36	0.23	-7.41
Female breadwinner					
Quintile 1	10.41	-7.51	0.27	0.32	-6.93
Quintile 2	11.21	-7.75	0.35	0.29	-7.11
Quintile 3	11.41	-8.04	0.43	0.22	-7.40
Quintile 4	12.09	-8.21	0.42	0.16	-7.64
Quintile 5	11.23	-8.96	0.37	0.10	-8.49
Total	11.91	-8.00	0.46	0.14	-7.41
Dual earner					
Quintile 1	11.91	-7.16	0.34	0.17	-6.65
Quintile 2	12.52	-7.44	0.51	0.22	-6.72
Quintile 3	12.31	-7.85	0.50	0.16	-7.20
Quintile 4	11.59	-8.36	0.48	0.12	-7.76
Quintile 5	11.25	-8.90	0.39	0.05	-8.46
Total	12.28	-7.75	0.40	0.33	-7.04
None employed					
Quintile 1	11.55	-6.98	0.32	0.51	-6.18
Quintile 2	12.48	-7.68	0.45	0.33	-6.92
Quintile 3	12.94	-8.23	0.46	0.18	-7.61
Quintile 4	13.31	-8.67	0.50	0.10	-8.08
Quintile 5	12.78	-9.41	0.42	0.05	-8.95
Total	11.51	-7.92	0.42	0.22	-7.30

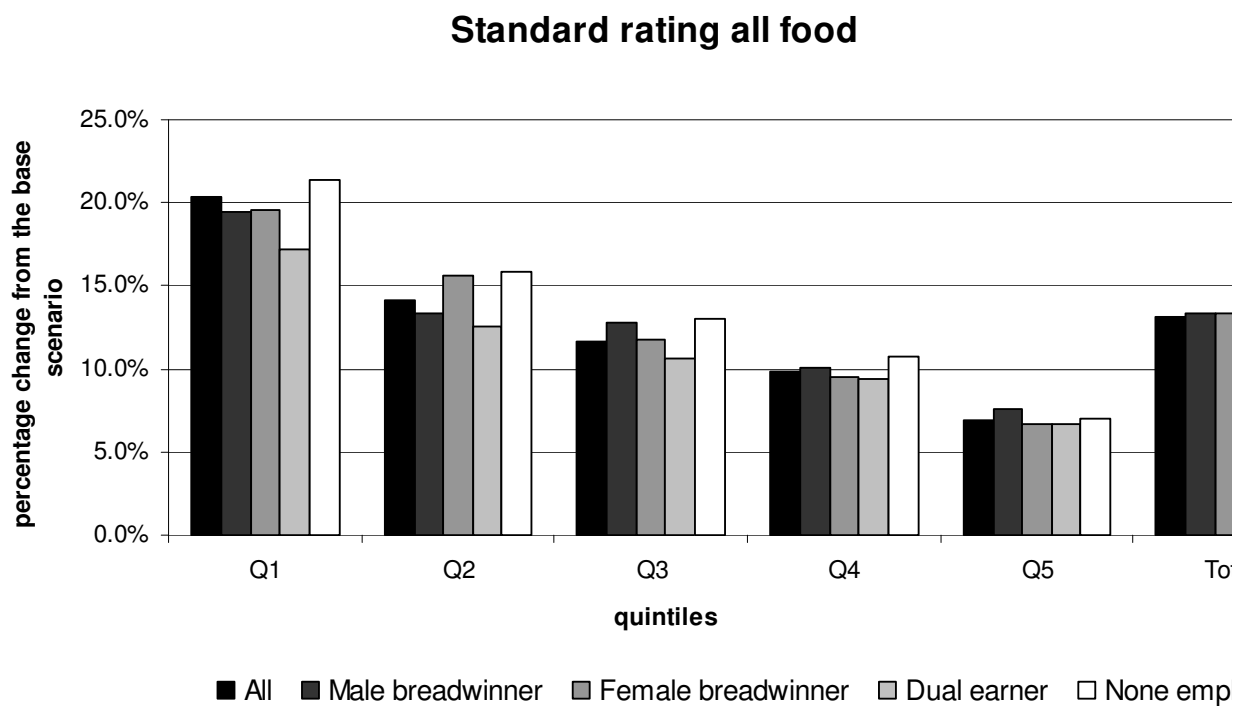
Source: own calculations based on EFS 2005-2006.

Figure 13 Policy simulation: Percentage change from base scenario – Increasing Fuel excise duty



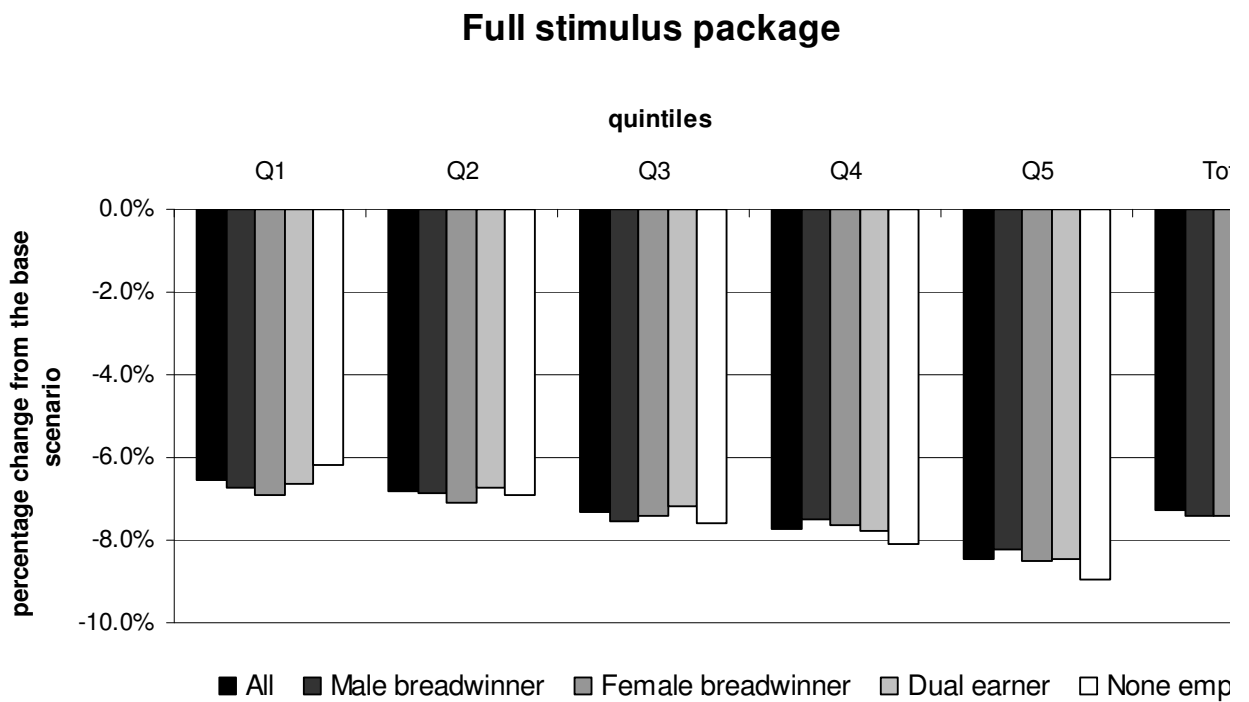
Source: own calculations based on EFS 2005-2006.

Figure 14 Policy simulation: Percentage change from base scenario – Standard rating
all food



Source: own calculations based on EFS 2005-2006.

Figure 15 Policy simulation: Percentage change from base scenario – Full stimulus package



Source: own calculations based on EFS 2005-2006.

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