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Gender incidence analysis of indirect taxes in the UK

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GENDER AND TAXATION:
IMPROVING REVENUE GENERATION AND SOCIAL PROTECTION IN DEVELOPING COUNTRIES

PROJECT COORDINATED BY:
IMRAAN VALODIA
SCHOOL OF DEVELOPMENT STUDIES
UNIVERSITY OF KWAZULU-NATAL

AND

CAREN GROWN
AMERICAN UNIVERSITY

COUNTRY PAPER: **UK**

GENDER INCIDENCE ANALYSIS OF INDIRECT TAXES IN THE UK

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January 2009

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1. Introduction

This paper evolved from the UK research within the project on "Gender and Taxation: Improving Revenue Generation and Social Protection in Developing Countries," a comparative international project that evaluates the impact of tax systems on gender equity in countries at various stages of their economic development. The national cases studied are: UK, India, South Africa, Ghana, Uganda, Morocco, Mexico, and Argentina.

The primary goal of this paper is to understand the extent to which different expenditure patterns between men and women give rise to gendered indirect tax incidence rates. Because expenditure data is only available at the household level, and to ensure the same methodology across all countries, individual indirect tax incidence rates are computed using an intrahousehold per capita resource allocation rule. This means that household expenditure and tax paid is divided by household size to obtain an estimate of individual expenditure and individual tax paid. Per capita rule overlooks the fact that household members do not consume each good equally, but more importantly, it assumes a very balanced and equal power within the household. Equivalence scales would not solve this problem because they refer to resource needs, and not resource allocation and control. Gender power is thus captured by breaking down the analysis according to household gendering types. The classic gendering variable is to use the gender of the head of household, under the assumption that women have more power in female headed households than in male headed households. We also used two other household gendering variables, one based on the relative proportion of adult women,

and the other on the employment status of adults. Table 1 shows the overlap between these three household gendering variables. The overlap between the three female types of households (female headed households, female breadwinner households and households where there are more women than men) is almost 40% - 629 out of 1619 households fall in this group. This overlap is however much weaker for male types of household, falling to 532 out of 2597, mainly because 47% of households where there are only male breadwinners have an equal number of male and female adults. In other words, it is more likely that a man will have more power when there are both male and female adults than a woman. Surprisingly, for female headed households, almost 90% of households where there are only male breadwinners have an equal number of male and female adults and 75% of households where both men and women are working have an equal number of male and female adults. The most common household type is the male headed household, where there is an equal number of male and female adults and both men and women are working.

Using this methodology and household typologies, gender differences in indirect tax incidence will rise from the fact that men and women have different propensities to live in different household types, and thus in different positions of the income distribution. Table 2 shows the propensity of women to live in each type of household. Not surprisingly, these vary according to the number of female and male adults classification, but it also changes significantly with the employment status gendering variable.

The comparative study uses household expenditure as a proxy for disposable income. De-Henau et al (2009) analyse expenditure-based tax incidence, where individuals are ranked according to their household's per capita expenditure and where the latter is used in the denominator of individual tax incidence measures. In this paper, however, we use household's per capita normal disposable income instead, but main differences will be highlighted.

The presence of children, urbanisation and ethnicity prove to be important conditioning variables that explain some of these differences. Results do show significant gender differences that render themselves to some interesting policy implications. This paper does not attempt to analyse behavioural changes in expenditure patterns, but still shows how there can be tax policy changes that are budget neutral. This discussion is particularly relevant given the stimulus package that the government has launched in November 2008. Next section will briefly comment on the overall UK tax system and section 3 will discuss the data sources, methodological notes and main incidence results. Section 4 will present a few tax policy simulations and their overall changes in tax receipts and Section 5 concludes.

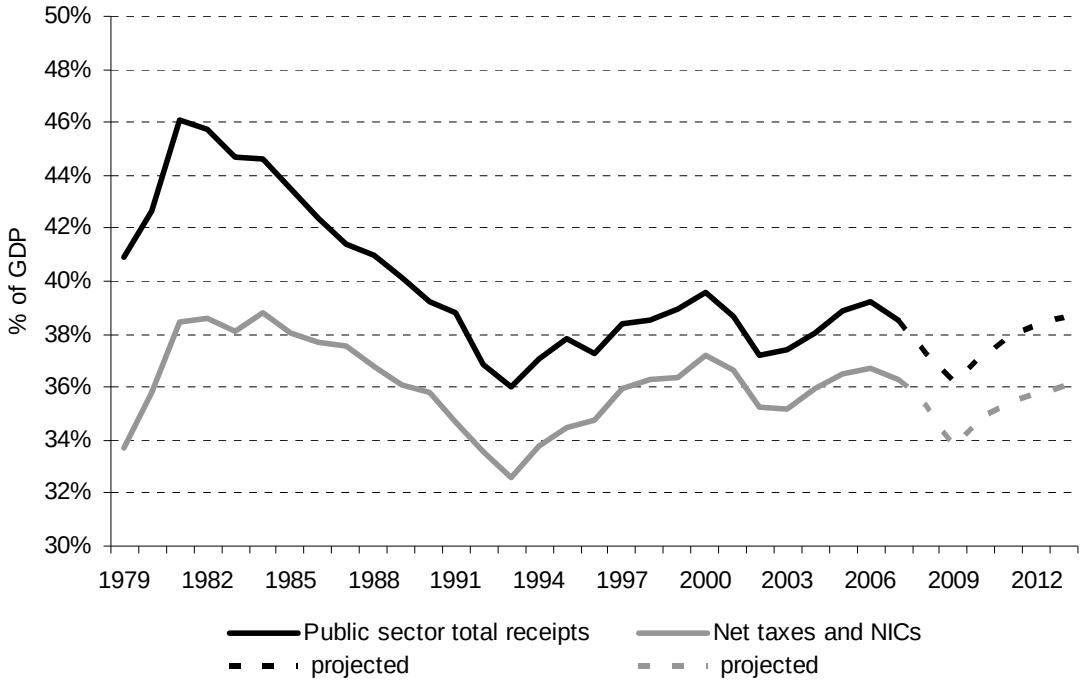
2. Description of the country

a. Overview of the Tax system in the UK

Tax to GDP ratio

Figure 1 shows how net tax revenues (including social security contributions) have varied as a share of GDP in the UK since 1979. 1979 is a convenient starting point since it marked the election of the right-wing Conservative government that promised to reform government spending and cut taxes. The other notable date is 1997 when the "New" Labour government that remains in power in 2008 was first elected. It called itself "New" in an attempt to rid itself of the Labour party's image as favouring high taxation and spending. During both governments the share of GDP going to taxes rose initially, fell back and then rose again. Since 1997, taxes have risen as a share of GDP, but remain lower than at their peak in the early 1980s.

Figure 1 Taxes (including national insurance contributions) as a percentage of GDP 1978-79 to 2007-08 plus projections to 2013-14



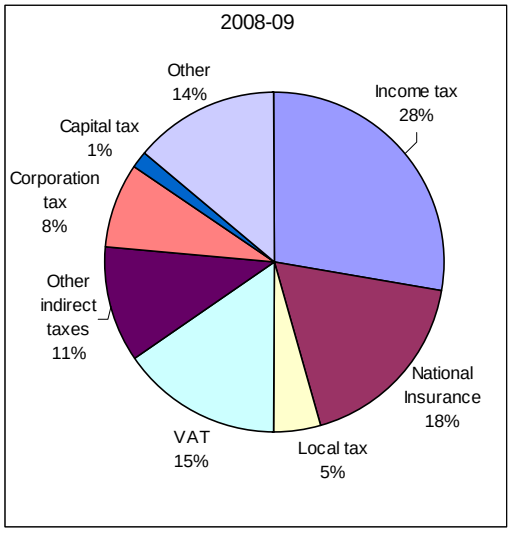
Source: HM Treasury (2008)

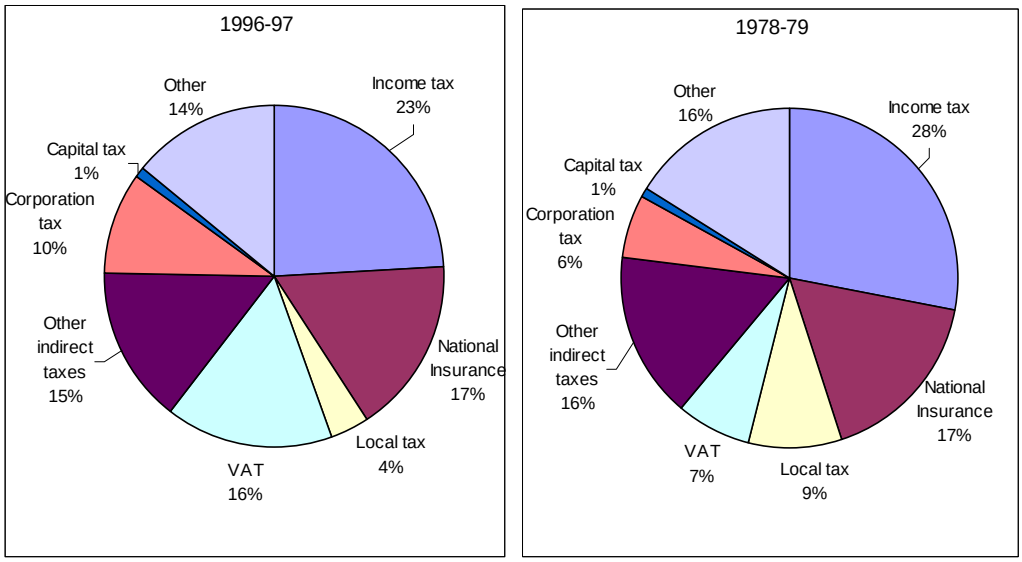
Until the 2008 stimulus package, taxes were forecast to raise 36.7 percent of GDP in 2008, a larger share than thirty years ago, and the share of government revenues was projected to stabilise at about 40 percent of GDP, which was relatively low by European standards (Adam et al. 2008). The share of national income taken in tax in the UK is now around the average for developed countries: lower than most of the EU15 countries (such as France, Italy and the Scandinavian countries), but higher than in most of the new EU countries of Eastern Europe and higher than in the USA, Japan and Australia.

Changes in the composition of revenue over the past ten years

The UK tax system raises about 60 percent of total government expenditure from personal taxation, i.e., taxes and compulsory social contributions (national insurance contributions) that can be allocated to households (Jones 2008). Such taxes include personal income tax, employees' contributions to national insurance, council tax (local taxes levied on housing) and expenditure taxes. Figure 2 shows the composition of government total receipt in 2008-09, and for the years 1978-79 and 1996-97 for comparison. Of the total receipt (GBP 546 billion in 2008-09), about 27 percent comes from indirect expenditure taxes (VAT, as well as excise duties, stamp duties and vehicle excise duties included under "other indirect taxes").

Figure 2 Composition of UK government current receipts (2008-09, 1996-97 and 1978-79)





Note: 'VAT' stands for Value Added Ta

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

Most of the key developments in UK taxation over the last 30 years have been very much in line with those seen internationally. They include: a switch within indirect taxation from taxes on specific goods towards VAT (roughly counterbalancing each other). A reduction in the level and progressivity of personal income tax with reduction in both basic and higher rates, and the number of rates reduced (mainly cuts following pre-election budgets[2]). The move towards independent taxation of members of a couple has been completed in 1990[3]. This however has been counterbalanced by the

[2] The newly elected Conservative Government cut the top tax rates from 83 percent to 40 percent (for earnings) in 1980 and further abolished the starting rate of 25 percent. The starting rate was re-introduced by the same party in 1992 at 20 percent and cut to 10 percent (except for savings) by the New Labour government following an electoral promise in 1999. However, the same New Labour has just abolished this rate to a considerable outcry in 2008.

[3] With the exception of a married couple's allowance, only for couples in which one partner was born before 1935; this is therefore meant to disappear.

introduction of refundable Tax credits for low-income workers and families, which are means-tested on family income (see below under personal income tax).

There have also been some changes in the taxes of companies with a reduction in the rates of corporation tax and also in the value of allowances for capital investment. Credit given for corporation tax already paid on profits has been reduced. And finally some new environmental taxes have been introduced.

Over the last ten years, the structure of tax receipts has remained very stable, with a slight shift away from indirect taxes towards income tax and national insurance since the election of the Labour government in 1997 (Figure 2). However, despite the introduction of some environmental taxes, the share of revenue coming from indirect taxes has fallen mainly because fuel duties have been cut substantially in real terms. Because income tax rates were cut in the period, the rise in the share of revenue from income tax is entirely due to fiscal drag. The small rise in the contributions of corporate and capital taxes was due to the rising size of the financial services sector, booming stock and property markets and increased rates of stamp duty (transactions tax) on property.

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 a corresponding fall in other expenditure taxes. However,

substantial cuts in income tax rates in the period 1979-1997 were again counteracted by fiscal drag, leaving the share of revenue contributed by income tax much the same. There was also a substantial fall in the proportion of revenue coming from local taxes (and corresponding fall in local government autonomy) (Figure 2).

The UK tax and benefits system

Because a substantial proportion of tax receipts (approximately £143 billion, slightly more than the total raised by personal tax, excluding national insurance) are spent on benefits and tax credits (payments in excess of tax liability), and they both effect the disposable income of households, effects on distribution can only be assessed by examining the tax and benefit system together. Further spending on public services and other benefits in kind (around £160 billion of which can be allocated to households) also affects the distribution of well-being (Jones 2008).

The net effect of this system is redistributive. Before any government intervention the top quintile of households had an average income 14.8 times that of the bottom quintile of household: but after taking account of cash benefits this ratio was 6.6 to 1, the progressive nature of direct taxation reduced this ratio to 5.5 to 1 for disposable income, but taking account of indirect taxation which is regressive raised it back to 7 to 1. So the net effect of the system alone is neutral between income household levels. Taking

account of public services that could be allocated to households reduces this ratio again to 3.6 to 1 (Jones 2008: 39, Table 1)[4].

So while the taxation system is broadly neutral, large contributions to reducing inequality are made by public services and by cash benefits and tax credits, many of which are means-tested on household income. The absolute amount of cash benefits declines with increasing income, so the highest quintile receives just over a quarter of the amount received by the lowest quintile (ibid, Table 1) and the bottom two quintiles receive between them 59 percent of all cash benefits. Cash benefits include state retirement pension, unemployment pay, incapacity benefit, statutory maternity pay, income support, housing and child benefit, student support, disability allowance and, since 1999, tax credits.

The receipt of benefits in kind, largely public services such as health, education and means-tested school meals, housing and travel subsidies, is also progressive with poorer households receiving more than higher households, mainly due to the concentration of children, students and older people in lower income households.

Direct taxation at the national level, which consists of personal income tax and national insurance contributions, is also somewhat progressive with the highest quintile paying

[4] Figures reported in this paper that come from secondary sources are calculated on quintiles defined on households ranked by equivalised disposable income (before housing costs, taking account of both taxes and cash benefits). Household incomes are equivalised using the McClements scales, the equivalence scale routinely used in UK government statistics. This method is seen as creating quintiles based on a reasonable proxy for household standard of living (Jones, 2008: 38).

on average 25 percent of their gross income in direct taxation compared with 10 percent for the lowest quintile. This is however, considerably less progressive than the PIT systems of other European countries at similar levels of development, which tend to have higher top rates. The additional higher rate proposed from 2011 to pay for the recent stimulus package will move the UK more in line with its European partners. However, it may not be implemented particularly if there is a change of government by then.

Local taxation, "council tax", is the other form of direct taxation, which is charged on housing, and is, despite rebates available to low income families in the form of a council tax benefit, highly regressive with the poorest quintile paying about 5 percent of their gross income as opposed to 1.7 percent for the highest quintile. Only the lowest quintile pays more in local than in national direct taxation.

Expenditure taxes in the UK on final goods and services include: VAT, duties on excise alcohol, tobacco, gasoline, oil, betting and a few other goods, customs duties, a fossil fuel levy, motor vehicle duties, air passenger duty, taxes on insurance premia, licences for driving and TV, Stamp duties (taxes on certain types of transactions) and National Lottery taxes. Most, but not all of these taxes are regressive with respect to household income. This is partly due to those with higher incomes being more likely to save and make mortgage payments which are not taxed. Further those in the lowest quintile record higher expenditure than income; this may be due to them funding the former

through borrowing or due to temporary factors (since income and expenditure are recorded over different periods). However, the composition of expenditure taxes and patterns of expenditure over different quintiles means that such taxes are still regressive even with respect to total spending (when that includes mortgage payments and regular savings).

b. A gendered picture of the UK economy

Comparing the UK with the rest of the European Union we find that main gendered characteristics of its employment and social structure are:

- a high level of employment for both working-age women (and men) with, until recently, relatively low unemployment rates for both sexes;
- long full-time working hours, for both men and women;
- a high proportion of women's employment in part-time, jobs, largely low-paid;
- one of the highest gender pay gaps, especially for part-time workers and also at the top of the earnings distribution;
- high poverty rates, especially for the elderly and children;
- high proportions of lone parent families and teenage births.

Employment

Levels of employment are high in the UK compared with the rest of Europe for both men and women aged 15-64 (respectively 77.3 percent and 65.8 percent in 2006). These figures are close to the employment rates of Denmark, Sweden, the Netherlands, and Finland (European Commission 2008). However, more than 40 percent of female employment is part-time. This proportion has remained unchanged since the mid-1980s, and is one of the highest in Europe (after the Netherlands and Switzerland). Part-time employment often low paid and less protected than full-time.

Pay

The median hourly wage of part-time employees was GBP 7.50 in 2008 on average (similar for both men and women), which is about 63 percent of the full-time wage rate (ONS 2008). This gap and women's part-time employment largely explains why around two-thirds of low-paid employees in 2006 were women (Palmer et al. 2008). The level of the minimum wage, relatively low by comparison with European countries of similar levels of GDP per capita, has therefore been a significant factor in determining the gender pay gap.

The full-time gender pay gap, one of the highest in Europe, was on average 13.5 percent in 2008 (measured as the relative difference in the median hourly wage rate between full-time women and men). It was 8.5 percent for the lowest decile of the earnings distribution and 21 percent for the top decile (full-time employees, deciles by category

and gender) (ONS 2008). Over the past decade, the pay gap between the lowest paid full-time men and the lowest paid full-time women has fallen (largely due to rises in the minimum wage). By contrast the gap between the highest paid men and the highest paid women has remained roughly the same.

The biggest gender pay gap is that between men working full-time and women who interrupt their employment in any way to care for others: the wage gap between part-time female workers and full-time male workers was 40 percent in 2008. If we look at the life-time earning differential between men and women (earnings cumulated over years up to retirement), women's earnings would account for only 62 percent of those of men considering current situation of those who were born in 1970 (Joshi 2005).

Another way of illustrating gender differences in income is to look at the overall income gap between men and women. This gap opens up over the life course (Fagan et al. 2006). On average women's annual income is 69 percent of men's; the gender difference is smallest for those aged under 25 years (90 percent); it widens to around 60 percent for those currently in their mid-30s to late 50s, and then narrows for those aged 65 years and older (70 percent). Again note that this income gap may be underestimated as it does not take account of within-household inequalities (neither does it account for the children's entitlement to some social benefits).

Household composition

28 percent of all British households consisted of just one person in 2006-07 (Jones 2008). About half of these were pensioners (10 percent women, 3 percent men). 43 percent were adults (two or more) without children and 29 percent families with children (including lone parents). Compared with the 1991 Census, little has changed, with some more one-person households than in the past due to an increase in single working-age adult households (McConnell and Wilson 2007). In 2006, 65 percent of dependent children lived in married couple families, 12 percent in cohabiting couple families, 22 percent in lone mother families and only 2 percent in lone father families (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 retired people and those in full-time education. Lone parent families are heavily concentrated in lower quintiles, while households consisting of two or more adults with children are disproportionately in higher quintiles. Pensioners of all types are also more likely to be found in lower income quintiles, and it is relatively more so for single women. Overall, women are fairly evenly spread across the quintiles, but there are slightly more men in higher than in lower quintiles (Jones 2008).

Poverty

According to the most recent report on monitoring poverty in the UK (Palmer et al. 2008), women are slightly more likely to live in low-income households (incomes below 60 percent of the median household equivalised income). Overall poverty rates were 20 percent for women and 18 percent of men (after housing costs) in 2006-07. The gap is relatively larger if we exclude couples: 27 percent of single women live in poverty, compared with 23 percent of men. This gap is mainly driven by higher poverty gaps for single pensioners and for lone parents. The latter category is dominated by women (50 percent of which lived in poverty). However, 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 households where money is in short supply women also tend to have the stressful burden of budgeting and managing debt".

3. Indirect Tax Incidence Analysis

We will only analyse the incidence of VAT and excise duties, which as discussed earlier, are the main sources of revenue among indirect taxes.

a. General Information on Indirect Taxes considered

VAT

There are three VAT rates and exempted goods in the UK. Table 3 describes the goods that are subject to each regime in April 2005. The 2007 annual report released by the HM Customs and Excises (HMCE) body estimate that over 50 percent of goods spent on the typical household are charged at the standard rate, over 30 percent are exempt and reduced rate goods are a small minority, which has however been slightly increasing (HMRC 2007).

Since December 1, 2008, the UK government has reduced the standard VAT rate to 15 percent and plans to increase it back to 17.5 percent on January 1, 2010. Most of the analysis was carried out with a standard rate of 17.5 percent, but later in this chapter, we discuss the impact of such temporary reduction.

Table 3. 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, caring and health services (exc. spectacles, lenses, sunglasses, most mobility and hearing equipment and non-NHS medical products and services), postal charges, betting and funerals

The most important exempt services included in this analysis, i.e. education, caring and health, do not include substantial VAT-rated goods or services in their production process. According to Mahajan (2006), the education, health and social work product category in the input-output table has 70 percent of its intermediate consumption taken from its own industry. Moreover, only a very small proportion of their factors of production are imported (in 2004, and according to Mahajan (2006), education imported 0.9 percent of its factors of production and health imported 1.5 percent). Therefore, and like all other countries in the project, we treated exempt goods as if they were zero-rated.

Excise duties

Most excise duties are specific or unit taxes, that is, they are an actual amount per unit consumed. Some goods, such as cigarettes, also have an ad valorem or percentage tax, which charges a percentage of the market price[5].

Every year, the HM Customs and Excise (HMCE) publishes the retail prices of some typical excisable goods such as a pack of 20 cigarettes, pint of beer with 4 percent alcohol, 70cl bottle of whisky, and so on. These rates are presented in Table 4.

[5] The Chancellor typically announces excise rates either as pence on duty or as both the percentage on duty and corresponding pence on the pre-tax price.

Table 4 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 199.6 pence in specific duty and 104.3 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

b. Data and methodology

Data

The main data source for this analysis is the Expenditure and Food Survey (EFS) which covers about 7,000 households in the United Kingdom each year. It brought together and replaced the Family Expenditure Survey (FES) and the National Food Survey from 2001/02. We have used the most recent wave available at the end of 2007 (see ONS 2007), whose information was collected at the end of 2005 and in the first months of

2006 (the sample period still covers 12 months of the year, to avoid seasonal effects). This data set only covers private households, which means people living in hotels, student flatshares, lodging houses and in institutions, such as old peoples' homes, are excluded. By "household" is meant a unit that "comprises one person or a group of people who have the accommodation as their only or main residence and (for a group) share the living accommodation (i.e. a living or sitting room), or share meals together or have common housekeeping." (ONS 2005).

The data set includes very detailed questions on income and sources of income, benefits and contributions, housing characteristics, together with socio-demographic information on all members in the household. The gender of the household head is also available[6]. We have merged this data set with additional regional information that allows us to identify whether the household lives in an urban or a rural area. It also contains detailed expenditure data at the household level, collected via a face to face interview and an expenditure diary that is kept for two weeks.

The number of households in Great Britain responding to the EFS in 2005/06 was 6,258 (about 1 in every 4,000 households). The response rate was 57 percent and there is

[6] From 2001-02, the concept of household head was replaced by a household reference person (HRP) in all UK government-sponsored surveys. The household reference person is the householder, i.e. the person who a) owns the household accommodation, or b) is legally responsible for the rent of the accommodation, or c) has the household accommodation as an emolument or perquisite, or d) has the household accommodation by virtue of some relationship to the owner who is not a member of the household. If there are joint householders the household reference person will be the one with the higher income. If the income is the same, then the eldest householder is taken.

evidence that the characteristics of the non-respondents are different from the characteristics of the respondents (see Foster 1996). An additional sample of 527 households covers Northern Ireland. Sampling and population weights available in the EFS try to correct for non-response biases and to ensure representativeness of UK private households according to region, sex and age. Quarterly weights are also available to clear seasonal effects of those individuals that are interviewed later in the year due to unsuccessful initial contacts (ONS 2005). It is also likely that the expenditure patterns we observe are not representative, especially for tobacco and alcohol, which have been assumed to be underreported in work carried out by Jones (2007). We will not assume underreporting and will take the expenditure patterns recorded at face value. In fact, and as raised by Mitton (1998), "There is evidence to suggest that one of the main problems with FES in this regard is not under-reporting by individual respondents, but the coverage of the survey: it excludes people who may spend heavily on these [mainly alcohol, tobacco and ice creams] products, for instance tourists, publicans and members of the armed forces. In addition many students, a group who tend to drink and smoke, are excluded from the survey since halls of residence are not counted as households for FES purposes, nor are other 'institutional' populations."

Calculating Taxes

VAT is a proportional tax, and as long as all goods are taxed at the same rate within each expenditure item, it offers no methodological difficulties. Excises however, do

offer a few challenges because from our expenditure data, we only know the total amount spent and not the number of units purchased (nor the actual average price they were charged per unit). From Table 4, we obtain excise duty rates on typical items. Even though these are representative goods in terms of being consumed by a large proportion of households that have a positive expenditure on tobacco, alcohol or fuel, we still need to have the retail price of all excisable goods within the tobacco and alcohol categories to be able to estimate the number of units each household consumes of these types of goods and hence, the total amount of excise duty tax they were charged. Because not all retail prices were available, the estimation of excise duty tax per category of goods per household proceeded as follows.

(i) *estimating an average price for goods for which the retail price was not available*
The HMCE annual report also publishes the national amounts of each excisable good released for consumption in the UK. By adding up the expenditure of all households in the EFS, and reweighting them by their sampling probability, we estimate what would be the national household expenditure on each good. Hence, the ratio of national expenditure divided by national quantity gives an estimate of the average price charged per unit.

(ii) *comparing the average price obtained in (i) with the retail price when available and computing a correction factor*

We apply the same procedure as in (i) even when the retail price is available. There are two reasons to expect the prices in (i) to be biased. One reason has to do with the fact that not all quantities released for consumption are spent by households. Households only account for 48 percent of all final demand in the UK (Mahajan 2006). On top of this, and as already discussed, the reweighted expenditure of households surveyed in the EFS will be smaller than the national expenditure because some types of households, which consume a disproportionately large amount of some of these excisable goods, such as tobacco and alcohol, are excluded. Given that we observe one retail price per category of goods, we compute the proportional difference between the estimated price and the official retail price and apply the same correction factor to all goods (within that category) for which the retail price is not available. Under the assumption that the degree to which the two sources of bias are similar for goods within the same category, this yields a reasonable estimate of retail prices.

(iii) computing the excise duty tax

Using the formula to compute the pre-tax price – $p = (1+v)(л+d+ap)$, where p is retail price, v is VAT rate, л is pre-tax price, d is specific duty and a is ad valorem rate, we estimate the amount of excise duty tax per household. All duty rates can be found in the HMCE annual report (2005). However, the EFS expenditure items available are not always informative enough of which duty rate to apply. We have assumed spirits have an average ABV of 40 percent, a beer has an ABV of 4 percent, alcopops based on spirits have an ABV of 15 percent and those based on beer an ABV of less than 5

percent. When the good in the EFS could fall under two different duty rates, we have computed a weighted average of the relevant duty tax, using the national amounts released for consumption as weights. If national amounts were not applicable either, we used a simple unweighted average.

For betting and gaming, excise will depend on sort of activity, level of profits or potential profits. The expenditure on different Lotteries was readily available and corresponding taxes were easily calculated. Apart from the National Lottery stakes and expenditure, we further had betting in general and bingo. 15 percent of gross profit tax is charged in bingo and 15 percent of stakes and expenses and profits, net of winnings, is charged on betting games. None of these gambling expenditures is subject to VAT and calculating the excise duties based on household expenditure was straightforward.

Incidence Methodology

We have assigned household expenditure to each individual in the household by dividing total household expenditure with household size. This is mainly because we could not find a common methodology across all countries involved that could be more informative about intrahousehold allocation differences or household sharing rules.

The incidence measure chosen was tax – either a particular type of tax, e.g. VAT, excise duties or any other discussed above, or total tax for particular categories of goods –

divided by total household normal disposable income. Because some household types are more likely to be located in one part of the income distribution rather than another, we opted to condition our analysis on individual income quintiles. By this, we mean that we use per capita household disposable income and sort the individual share into quintiles. We weighted the observations according to household size to account for the fact that individuals are coming from households with differing size. This per capita sharing rule still allows us to draw some reliable conclusions in terms of actual expenditure patterns and actual tax incidences because of the differences in the likelihood of being in each quintile, even if it tends to undermine differences across different groups, or by gender.

The analysis was further conditioned on gender and empowerment measures. Apart from the standard headship sex measure, we also used a household employment status measure and a gender balance measure. The employment measure distinguishes those households where there are only men working (most often a male breadwinner household), those where there are only women working (most often a female breadwinner household), those where both men and women are working (most often a dual earner) and those where no one is employed. The gender balance measure takes account of the number of adult males and females, where adults are defined as those over 18 years old and not over 16 as our data set classifies them[7], and distinguishes those households where there are more men than women (male dominated), those where

[7] This difference means that there can be men or women aged below 18 that are employed but are not considered adults in this study.

there are more women than men (female dominated) and those where this number is the same (equal # of adult men and women). We also took account of the presence of children, e.g. in tables 8 and 9; of ethnicity, e.g. in table 7; and of whether the household lives in an urban or rural area, e.g. in table 6.

The categories of goods chosen have been agreed among all teams in an effort to make them as comparable as possible and still be informative of country specificities. These categories result from a tradeoff between the number of categories and highlighting category distinctions which represent different lifestyles and different degrees of necessities. For policy purposes, we also tried to isolate the main items that are subject to excise duties or that are VAT exempt. The baseline classification is the COICOP, the Classification of Individual Consumption by Purpose and it was agreed by the United Nations Statistical Comission. We have 33 categories and these are the following:

- Food, divided into basic non-processed food, basic processed food and non basic food.
- Meals out
- Non-alcoholic beverages
- Alcoholic beverages, divided into beer and cider, spirits and wine
- Tobacco
- Clothing and footwear, divided into adult and children's clothing
- Housing expenditure, divided into: housing exc. Utilities, water, electricity, gas,

- Household fuel
- Household equipment
- Domestic and household services
- Health
- Transport, divided into collective, flights and private transport
- School transport
- Fuels and lubricants (transport use)
- Communications
- Recreation, culture and holiday
- Education
- Personal care, divided into necessities, baby products and other personal care items
- Gambling
- Miscellaneous (which includes care provision)

Collective transport is VAT zero rated. However, a large share of the costs involve fuel and fuel is subject both to VAT and fuel levy. Given the importance that fuel has in today's policy discussions, we assume that 30% of all collective transport individual expenditure is fuel and apply the relevant taxes to this share. This 30% rule of thumb was used by all countries.

c. Findings of gender differences in incidence

Incidence by type of taxes

Table 5 presents some preliminary summary results of the incidence by type of tax – total tax, VAT, excises and fuel levy, according to the three gendering household measures: sex of the household head, employment status of members of the household and gender balance of adults within the household.

The headship measure shows that female headed households have higher tax incidence for all types of tax, except for fuel levy where this difference is not significant. But headship is not a meaningful categorisation for the UK: according to Table 1, 31 percent of the female-headed households are dual earner households and almost 7 percent are male breadwinner households.

By employment status, households where there is no men working (both female breadwinner or none employed households) bear the highest incidence on all taxes except fuel levy. Surprisingly however, female breadwinner households have the highest fuel levy incidence. Dual earner households have the lowest incidence on VAT and excises and the second lowest on fuel levy.

Analysis by household adult sex composition shows another picture. Male dominated households have the largest excise incidence rates and female dominated households have the highest fuel levy incidence. Households where there is an equal number of adult men and women, typically a couple, have the lowest overall tax incidence by far, and this is mainly driven by a very low incidence on excise duties.

When households were divided according to whether they lived in urban areas (Table 6), the main pattern subsides in both regions. Female headed households do hold the highest incidence for all types of tax, except fuel levy, and in both rural and urban places. Households where there is at least one man working have the lowest VAT and excise tax incidences. Fuel tax incidence is higher for single gender earner households in urban places, and only higher for female breadwinner households in rural households. According to the relative number of adult men and women in the household, total tax incidence is again lower for a gender balanced household. This is mainly due to lower excises and, in rural places, also to fuel levy. Male dominated households in urban areas have a much lower VAT incidence than their counterparts in rural areas and than female dominated households.

According to the ethnicity of the head of household (Table 7), results for White heads are very similar to the ones presented in Table 5. This is because the number of households sampled where the head was non-White is comparatively small. White female headed households have higher incidence for all types of tax, but this is not

significantly so for fuel tax. When the head is a female non-White, only VAT incidence remains higher than in non-White male headed households. According to employment status, total tax incidence is lower in households where there is at least one men working, and this is mainly due to VAT. The presence of children is very important in understanding these differences, as Tables 8 and 9 will show. The lower total tax incidence in households with a balanced number of adult men and women remains in both groups and is driven by lower excise and fuel incidence rates. Female dominated households have a much higher VAT incidence, but overall incidence is only marginally higher than for male dominated households for White headed households and not significantly different in non-White headed households. This is because in the latter, male dominated households hold the highest incidence for excises and fuel but a much lower VAT incidence whereas in the former, female dominated households have the highest incidence for all types of tax, including fuel.

Incidence by income quintiles and the presence of children

Tables 8 and 9 take account of income quintiles and the presence of children. Conditioning on employment status in Table 8, one can see that the presence of children not only reduces the incidence of all taxes for all household types and nearly all quintiles, but they also reduce the regressivity of total tax. Differences between households with and without children are lower for dual earner households, whereas for the none employed category, incidence of VAT and excises is actually lower when there

are no children in the household. This is probably due to the fact that the none employed category has household members which are, on average, 20 years older than the other categories, which implies higher expenditure on health which is, for most products, VAT exempt. Total tax incidence is highest when men are not employed, mainly because of VAT in female breadwinner households and excises in none employed households, both of which for the lower quintiles.

Table 9 also looks at how incidence changes with the presence of children and across income quintiles, but instead conditions on the adult sex composition of the household where individuals belong. The first striking aspect to note, albeit common to all tables presented so far, is the very high standard errors in the first quintile, particularly for those households with an uneven number of adult men and women. This means that single sex earner households include both the poorest (quite a few households reported a normal weekly disposable income close to zero[8]) and, possibly, the richest within quintiles. In particular, female dominated households without children in the first quintile bear an extraordinarily high incidence on all taxes and standard errors are the highest. Again the presence of children reduced the regressivity of total tax incidence, even after excluding the first quintile where extremely low values for disposable income are.

Incidence by commodity groups

[8] Two households reported a negative value but these were excluded from the analysis.

Table 10 shows how the incidence of different commodity groups changes across quintiles and households under different employment status categories.

Overall, the commodity groups with highest incidence are private transport, fuel for transport, recreation, alcohol, tobacco, non-zero-rated housing utilities and non-utilities. Where these categories are not subject to excise duties higher incidence is simply due to a large proportion of expenditure on these items. Apart from the exempted and zero-rated items, household fuel and gas, baby products, domestic services and gambling have the lowest incidence (even lower than aggregate health related products).

When looking at differences across employment status, it is again revealed that female breadwinner households and none employed households tend to have similar incidence rates except for baby products, composition of alcohol expenditure even if total alcohol incidence is similar, fuel (both for HH and transport use), transport (mainly due to private transport being higher for female breadwinner households), housing and miscellaneous. These seem to again reveal age compositional differences, whereas the similarities seem to be due, not only to the fact that these households tend to be poorer, even within quintiles, but also due to the absence of working men. None employed have the highest product tax incidence on gambling, furniture, housing, tobacco and health whereas female breadwinner households have the highest tax incidence on non-alcoholic beverages and surprisingly, both fuel for transport and collective transport. On

the other hand, male breadwinner households have very similar incidence rates to dual earner households, even if the latter often have the lowest incidence.

Table 11 shows how product incidence rates change according to household adult sex composition, still conditioning on income quintiles. Households with a balanced number of adult men and women (typically a nuclear couple household with and without children) mirror a lot of the results from dual earner households. Their product incidence rates are the lowest except for housing and housing maintenance and miscellaneous. These households, together with dual earner households, tend to be the wealthiest and these results are showing that the additional income is higher than the additional expenditure they can afford, mainly because a higher portion of their income is saved. Male dominated households have the highest incidence on total transport, mainly because of private transport and flights. Female dominated households again have the highest incidence on fuel for transport and personal care (due to necessities). These higher incidence rates on fuel are however explained by the fact that demand for fuel is inelastic and ends up being a much higher portion of a poor household's budget.

To distinguish situations where there is an effectively higher total tax being paid from situations where the total expenditure is lower, Figures 3, 4 and 5 show how total tax incidence is a result of the total tax rate and the average weekly expenditure spent on each item. Figure 4 does this separately by employment status and Figure 5 does it according to adult sex composition.

Figure 3 identifies the main commodity group items that are consumed. Food, housing, transport, recreation, fuel and miscellaneous are the main items. In the aggregate, tobacco and alcohol do not have a very high total tax paid because their expenditure does not cross cut most households. Gambling shows up as a very modest item, despite it being subject to excises. Again, the proportion of households that spend money on gambling is small, even if larger among individuals living in households where no one is employed. According to employment status (Figure 4), it becomes clear why female breadwinner and none employed households have large incidence rates. This is mainly because overall, they have lower total expenditure, which raises the tax incidence on goods for which their price elasticity is rigid. Dual earners on the other hand, have higher expenditure and higher total tax on most goods, except for food where none employed actually spend the highest amount of all households. This is also the reason why female dominated households have high incidences. Figure 5 shows that these households tend to have the lowest expenditure on practically all items and dual earners the highest. This turns out to yield relatively high incidence rates for the former.

Comparing disposable income analysis with expenditure-based analysis[9]

Tables 12 and 13 show how the analysis would have differed if household expenditure would have been used instead of disposable income to compute tax incidence measures

[9] All tables used in this paper have also been done using expenditure. Their analysis and significance tests on how different income-based and expenditure-based values are are available upon request.

and to rank individuals according to their well-being. All in all, and because the differences arise from different propensities to save in different parts of the income distribution, the richest more likely to do so, total tax is more regressive when using income. Also, because there are a lot of families with a disposable income close to zero, incidence rates are also higher in absolute terms, specially for lower quintiles and for VAT.

When looking at incidence on commodities across quintiles, incidence using income is much higher on lower quintiles and much lower on higher quintiles. Overall, the commodities for which the unconditional incidence rate is substantially higher are alcohol, tobacco, housing utilities, housing itself, furniture, transport (mainly due to private transport), fuel for transport and recreation.

4. Policy simulations

Table 14 shows the change in incidence rates for different tax policy scenarios. This is across the income distribution and then further conditioned on employment status. The last two rows of the table also show the overall annual tax revenue collected under each policy scenario. These were estimated by applying the policy rates for each household, then using the quarterly weights available in the EFS to extrapolate to the whole population. The regime used in the incidence analysis is estimated to raise almost GBP 80 billion, which is much lower than the official estimates. HM Treasury (2007)

estimates a receipt of GBP 121 billion for 2006 (41 billion on excise duties and 80 billion on VAT receipts). This discrepancy can be explained by underreporting, but also by the fact that we excluded some commodities subject to VAT or excises from the analysis. Also the ONS has a behavioural model that allows for substitutability between goods when relative prices change, which we have excluded from our simulations.

As off December 1st 2008 until the end of 2009, standard VAT rate reduced to 15 percent as a way to boost consumption and following an overall trend of decreasing the standard VAT rate on the grounds that this is a regressive tax. Table 14 shows that in terms of redistribution, this measure actually does not reduce the regressivity of VAT on food. It however seems to favour poorer female breadwinner households more than poorer male breadwinner households and households in higher quintiles more than in poorer quintiles for all employment categories. All in all, and given that it implies an estimated drop in revenue of almost 9 percent, this VAT reduction does not foster gender equality or redistribution and would not be recommended as a means to boost consumption or enhance equality.

To counteract the budget slimming with the VAT reduction, the government has also increased excise duties on alcohol, tobacco and fuel. Increases in fuel levies will be done gradually and by April 2010, each litre of unleaded petrol and diesel will be 4.34 pence more expensive, and each kg of gas road fuels will increase by twice as much. Biofuels will have a moderate increase of 2 pence per litre. In the simulation, we

assumed an increase of 4.3 pence per litre (or kg) for all types of fuel. This measure bears higher percentual change in the lowest quintile, for all types of households where men work, though the relative increase in tax incidence is less unequalising between quintiles in female breadwinner and none employed households. This reinforces the deepening of inequality already promoted by the VAT reduction. In this particular case, it would affect men more than women due to the different commuting habits.

Finally, the result of the last set of simulations shows the importance of zero-rating food for low income households, as a standard-rate applied to basic food (and to all food as well, including canteen, meals out and non-alcoholic beverages), would increase the total incidence on low expenditure household much more than higher quintiles (gradual increase along the distribution). This is true for all household types and the change is much stronger for none employed and female breadwinner households.

5 Conclusions

In this chapter we have analysed the gender effects of expenditure taxes in the UK. The overall tax system is mildly regressive with respect to income quintiles, this is a combination of a progressive PIT system, but less progressive than that of many other European countries, and a regressive expenditure tax system, but somewhat less regressive than that of many other countries because nearly all food (and children's clothing) is zero-rated for VAT.

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 VAT zero-rated or exempt, and because 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 household with women members since they are somewhat more likely than men to live with children. The incidence of all indirect taxes is most often highest on those without children. Another significant gender difference is the expenditure on fuel by households with a male earner, even though incidence rates can be higher in female breadwinner households. Excessive commuting by car by male earners which, combined with long working hours, surely restricts their ability to provide care for their families and women's opportunities for paid employment. Indirect taxation may not be the most appropriate vehicle to address these issues, as De-Henau et al. (2009) discusses.

Policy concerning indirect taxation to rectify gender inequalities can be of two broad types. First there are policies that attempt to make the distributional impact of such taxation fairer in order to reduce gender inequalities across different households. Second, there are policies aimed at producing behavioural impacts to support a transformation of existing gender inequalities.

Unfortunately these two aims may be in conflict. This is because policies that attempt to reduce the behavioural impact of gender inequalities tend to incentivise behaviour for women only, such as labour market engagement, which is currently disproportionately carried out by men. Such policies would therefore have a current impact that favours men. On the other hand to incentivise men to engage in behaviour carried out much more by women, such as caring, should have a current impact that favours women too.

A second problem with thinking about policies of either type is that taxation may not be the best tool to achieve those goals, or would be so only in combination with other policies. In our comments below we shall therefore comment on other policies that might be necessary as counterparts to indirect policy changes.

Our first policy suggestion is that zero rating food (and children products and some other "merit" goods) should remain. Whether zero rates should be extended to cover the remaining food items, sugar products and confectionary, raises the dilemma of whether making a tax's incidence fall less heavily on poorer households and those with more women and children in them outweighs the aim of disincentivising harmful behaviour. The undoubtedly harmful consumption of sugar products and confectionary is highest among the poorest households and those in which there are more women and children. We feel that methods other than removing the tax on these items, reforming the tax

credit system perhaps, should be found to boost the income of these households, combined with other measures to encourage healthier eating.

Taxing goods with negative externalities can have contradictory effects. Taxing goods whose consumption is elastic will be effective in discouraging consumption but ineffective in increasing tax revenue and will fail as a means of redistributing incidence. On the other hand, taxing goods whose consumption is inelastic will impact on revenues and on the distribution of tax incidence but will not discourage consumption. The simulations that increase fuel levy by 4.3 pence per litre / Kg show that the impact of this increase, without taking account of any behavioural impact, would be highest for households in which there is a male earner, but the incidence on lower quintiles tends to be higher too. A gender impact analysis therefore supports the environmental considerations that point to the government standing up to the protests that rises in fuel taxes provoke. It should reinstate the automatic fuel tax escalator that raised the level of fuel tax each year[10], provided this is backed up by extensive improvements in the public transport system, which women use far more than men, and policies introduced to reduce the extent of long distance commuting in the UK, which also impacts badly on men's ability to participate in the care of their children. This would be a case of using the indirect taxation system to effect a change in the behaviour of men. However, if it

[10] Fuel tax has been a highly politicised issue in the UK over the past fifteen years. It is by far the most important excise duty, and the most important green tax, in terms of its contribution to government revenue. A "fuel duty escalator" was introduced in 1993, by which the rate of fuel tax would rise at a rate of 3% above inflation each year but abandoned in 1999 in the face of rising oil prices and protests and blockades by road hauliers. As a result green taxes now make up a smaller share of total revenue and national income in the UK than at any time since 1993.

proved ineffective in changing the behaviour of men an increase in fuel levy will end up squeezing some of the poorest household budgets. This would end up reducing the well-being of all members in these households, including women and children.

The UK is unique among the countries of this study in that tobacco tax has a higher incidence on women within the poorest households. 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, and other means found to boost the income of these households, through child tax credits or child benefit. Understanding how such households would respond to increases in tobacco duty rates would be necessary 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 programs need to be better targeted on members of such households, particularly since they contain large numbers of children.

The incidence of alcohol duties is highest in middle quintiles suggesting that there may be a degree to which consumption responds to prices. Under current consumption patterns its incidence is slightly higher on households with a majority of men in them and the UK is well known for having a severe alcohol abuse problem, especially among the young. This suggest that the present policy of raising alcohol taxes each year should be continued, and should be combined with other programs to discourage consumption.

In the UK, policies beyond the tax system could prove more effective in transforming gender roles and outcomes instead of or as back-up to such tax reforms. We suggested that improvements in public transport and in programmes to reduce alcohol abuse and female smoking should reinforce any tax changes. Similarly improving childcare affordability and availability, reducing gender wage gaps, and improving the pay and conditions of part-time jobs would be more effective in themselves in reducing the labour market disincentives that tax credits provide. Deeply entrenched factors affecting gender roles with respect to the labour market and caring responsibilities cannot be fully counteracted by the (indirect) tax system alone.

Indirectly, tax reforms could help; an important step in achieving such an outcome would be a more progressive tax system that raised greater revenues to fund public services such as high quality child and elder care, well-funded family-friendly policies (such as well-paid parental leave and working time legislation), 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 labour market, and remove gender inequalities more widely in society.

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Table 1: Overlap between all household gendering variables: gender of the head of household, employment status and relative number of adult men and women

		female-headed households			
		Adult males > adult females	Adult females > adult males	Equal # adult males and females	Total
male breadwinner	N	7	6	98	111
	Row frequency	6.31	5.41	88.29	100
	Column frequency	8.54	0.82	12.17	6.86
female breadwinner	N	9	629	130	768
	Row frequency	1.17	81.90	16.93	100
	Column frequency	10.98	85.93	16.15	47.44
dual earner	N	50	75	383	508
	Row frequency	9.84	14.76	75.39	100
	Column frequency	60.98	10.25	47.58	31.38
none employed	N	16	22	194	232
	Row frequency	6.90	9.48	83.62	100
	Column frequency	19.51	3.01	24.10	14.33
Total	N	82	732	805	1619
	Row frequency	5.06	45.21	49.72	100
	Column frequency	100	100	100	100
		male-headed households			
		Adult males > adult females	Adult females > adult males	Equal # adult males and females	Total
male breadwinner	N	532	28	500	1060
	Row frequency	50.19	2.64	47.17	100
	Column frequency	67.09	10.00	19.25	28.88
female	N	5	16	115	136

breadwinner					
	Row frequency	3.68	11.76	84.56	100
	Column frequency	0.63	5.71	4.43	3.71
dual earner	N	190	188	1165	1543
	Row frequency	12.31	12.18	75.50	100
	Column frequency	23.96	67.14	44.86	42.04
none employed	N	66	48	817	931
	Row frequency	7.09	5.16	87.76	100
	Column frequency	8.32	17.14	31.46	25.37
Total	N	793	280	2597	3670
	Row frequency	21.61	7.63	70.76	100
	Column frequency	100	100	100	100

Table 2: Proportion of adult women (against all adults) in each type of gendered household

	female-headed households			
	Adult males > adult females	Adult females > adult males	Equal # adult males and females	Total
male breadwinner	0.44	0.63	0.50	0.50
female breadwinner	0.41	0.98	0.55	0.87
dual earner	0.32	0.66	0.50	0.51
none employed	0.35	0.64	0.50	0.51
Total	0.34	0.88	0.51	0.63

	male-headed households			
	Adult males > adult females	Adult females > adult males	Equal # adult males and females	Total
male breadwinner	0.09	0.57	0.50	0.33
female breadwinner	0.33	0.63	0.50	0.51
dual earner	0.35	0.64	0.50	0.50
none employed	0.35	0.64	0.50	0.49
Total	0.22	0.63	0.50	0.46

Table 5: Overall Incidence by Household Types

Tax as a percentage of disposable income (Standard Errors in brackets)

	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
Headship					
Female headed	15.35	10.38	5.09	2.60	2638
	(91.52)	(59.57)	(38.39)	(27.63)	
Male headed	14.17	9.21	4.56	2.63	4140
	(24.08)	(10.01)	(10.02)	(2.84)	
Employment Categories					
Male breadwinner (Mb)	13.47	8.86	4.43	2.59	1171
	(10.67)	(7.83)	(4.82)	(2.64)	
Female breadwinner (Fb)	15.48	10.67	4.87	2.80	902
	(25.10)	(19.11)	(8.07)	(5.71)	
Dual earner (De)	12.95	8.72	4.10	2.56	2051
	(8.31)	(6.01)	(3.49)	(2.20)	
None employed (Ne)	15.60	10.14	5.22	2.50	1163
	(14.70)	(11.26)	(5.79)	(3.24)	
Household Sex Composition					
Male-dominated (Md)	15.84	9.05	5.69	2.79	1348
	(45.08)	(14.19)	(18.86)	(3.40)	
Female-dominated (Fd)	15.84	10.71	5.37	2.86	2008
	(104.26)	(68.53)	(43.78)	(31.53)	
Equal # females & males (E#)	13.65	9.28	4.21	2.48	3422
	(11.51)	(9.03)	(4.45)	(2.61)	

Equality of Means t-test with unequal variance at 5% significance level:

Table 6: Overall Incidence by Household Types according to a Rural/Urban status

Tax as a percentage of disposable income (Standard Errors in brackets)

	URBAN					RURAL				
	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
Headship										
Female headed	14.73	10.15	4.86	2.38	1960	17.20	11.0	5.80	3.26	678
	(104.44)	(68.66)	(43.93)	(31.61)		(29.16)	(20.01)	(10.90)	(7.91)	
Male headed	13.46	8.68	4.23	2.37	2835	15.56	10.19	5.22	3.16	1305
	(28.35)	(10.85)	(11.66)	(2.82)		(11.58)	(8.16)	(5.40)	(2.81)	
Employment Categories										
Male breadwinner (Mb)	12.31	8.13	4.0	2.36	841	16.14	10.40	5.41	3.12	329
	(9.96)	(7.46)	(4.27)	(2.40)		(11.73)	(8.35)	(5.79)	(3.06)	
Female breadwinner (Fb)	14.75	10.49	4.42	2.41	657	17.18	11.05	5.92	3.69	244
	(13.80)	(11.01)	(4.75)	(2.65)		(40.63)	(29.34)	(12.77)	(9.54)	
Dual earner (De)	12.19	8.17	3.80	2.28	1397	14.52	9.77	4.73	3.12	652
	(7.95)	(5.52)	(3.21)	(2.10)		(8.81)	(6.71)	(3.92)	(2.28)	
None employed (Ne)	14.36	9.43	4.67	2.26	789	18.38	11.63	6.46	3.04	372
	(14.02)	(10.99)	(5.13)	(3.07)		(15.78)	(11.67)	(6.89)	(3.52)	
Additional significant tests										
Household Sex Composition										
Male-dominated (Md)	15.14	8.19	5.44	2.55	993	17.53	10.93	6.30	3.35	355
	(52.84)	(15.82)	(22.05)	(3.54)		(13.96)	(9.39)	(6.35)	(2.97)	
Female-dominated (Fd)	15.43	10.75	5.09	2.51	1453	16.83	10.61	6.04	3.71	555
	(122.53)	(81.46)	(51.58)	(37.12)		(29.89)	(20.22)	(11.32)	(8.34)	
Equal # females & males (E#)	12.89	8.81	3.89	2.26	2349	15.28	10.20	4.89	2.95	1073
	(11.40)	(9.09)	(4.04)	(2.53)		(11.59)	(8.84)	(5.13)	(2.71)	

Equality of Means t-test with unequal variance at 5% significance level:

Table 7: Overall Incidence by Household Types according to ethnicity of the head of household

Tax as a percentage of disposable income (Standard Errors in brackets)

	NON-WHITE HEAD OF HOUSEHOLD					WHITE HEAD OF HOUSEHOLD				
	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
Headship										
Female headed	11.54	8.97	2.94	2.25	187	15.82	10.57	5.35	2.64	2243
	(8.08)	(6.61)	(2.70)	(2.37)		(104.05)	(67.98)	(43.62)	(31.35)	
Male headed	11.16	6.79	3.82	2.65	237	14.10	9.26	4.41	2.51	3585
	(8.25)	(4.74)	(4.34)	(2.47)		(26.45)	(10.72)	(10.90)	(2.85)	
Employment Categories										
Male breadwinner (Mb)	10.56	5.98	3.73	2.64	114	13.63	9.19	4.37	2.51	967
	(8.40)	(4.36)	(4.91)	(2.36)		(11.07)	(8.21)	(4.82)	(2.69)	
Female breadwinner (Fb)	11.61	7.94	3.38	2.72	63	16.08	11.25	4.99	2.79	766
	(7.08)	(3.64)	(2.93)	(2.63)		(27.91)	(21.45)	(8.86)	(6.27)	
Dual earner (De)	9.24	6.12	3.24	2.30	121	12.93	8.70	4.02	2.48	1772
	(5.40)	(3.33)	(3.07)	(1.99)		(8.12)	(5.98)	(3.33)	(2.11)	
None employed (Ne)	15.10	10.69	3.88	2.72	55	14.75	9.63	4.94	2.36	1017
	(9.70)	(7.38)	(3.58)	(2.46)		(15.28)	(12.29)	(5.62)	(3.37)	
Additional significant tests										
Household Sex Composition										
Male-dominated (Md)	11.90	5.96	4.20	3.05	86	15.57	9.01	5.48	2.62	1168
	(9.41)	(4.72)	(4.84)	(2.34)		(49.95)	(15.39)	(20.81)	(3.48)	
Female-dominated (Fd)	11.87	8.77	3.45	2.50	136	16.61	11.16	5.68	2.87	1684
	(7.43)	(6.17)	(3.04)	(2.22)		(122.63)	(81.01)	(51.46)	(37.01)	
Equal # females & males (E#)	10.73	7.46	3.27	2.32	202	13.66	9.31	4.14	2.42	2976
	(8.18)	(5.39)	(3.87)	(2.58)		(11.88)	(9.52)	(4.41)	(2.58)	
Additional significant tests										

Equality of Means t-test with unequal variance at 5% significance level:

Table 8: Incidence by employment status, presence of children and quintiles

	Total Tax	VAT	Excises	Fuel	Number of Households	Total Tax	VAT	Excises	Fuel	Number of Households	Total Tax	VAT	Excises	Fuel	Number of Households
	Male Breadwinner					Male Breadwinner with children					Male Breadwinner without children				
Quintile 1	15.34	10.15	4.98	3.14	171	14.11	9.32	4.66	2.96	132	37.13	27.86	10.58	6.19	39
	(13.79)	(10.26)	(5.08)	(3.46)		(8.83)	(6.82)	(3.78)	(3.01)		(40.97)	(32.27)	(14.03)	(7.30)	
Quintile 2	13.37	8.40	4.43	2.69	159	12.57	7.86	4.09	2.60	109	20.47	13.16	7.40	3.48	50
	(8.74)	(6.69)	(3.81)	(2.33)		(6.96)	(4.36)	(3.25)	(2.14)		(16.43)	(15.65)	(6.29)	(3.50)	
Quintile 3	13.69	8.97	4.46	2.43	189	13.13	8.81	3.91	2.39	87	15.43	9.52	6.20	2.56	102
	(7.83)	(5.30)	(4.76)	(2.04)		(7.32)	(4.99)	(4.04)	(1.97)		(9.04)	(6.25)	(6.21)	(2.24)	
Quintile 4	12.38	7.63	4.70	2.33	249	12.59	7.72	4.80	2.09	58	12.13	7.50	4.59	2.61	191
	(10.50)	(5.34)	(6.78)	(2.09)		(12.89)	(5.68)	(8.64)	(1.80)		(6.61)	(4.86)	(3.45)	(2.35)	
Quintile 5	10.23	7.52	2.88	1.65	402	9.93	7.61	2.45	1.33	45	10.46	7.45	3.20	1.90	357
	(6.89)	(6.64)	(2.35)	(1.59)		(7.15)	(7.39)	(1.92)	(1.09)		(6.69)	(6.04)	(2.58)	(1.85)	
Total	13.47	8.86	4.43	2.59	1170	13.07	8.60	4.23	2.56	431	14.83	9.77	5.11	2.70	739
	(10.67)	(7.83)	(4.82)	(2.64)		(8.63)	(6.01)	(4.40)	(2.46)		(15.65)	(12.21)	(5.99)	(3.18)	
	Female Breadwinner					Female Breadwinner with children					Female Breadwinner without children				
Quintile 1	21.08	14.40	6.58	3.75	128	17.51	11.86	5.55	3.44	103	76.32	57.96	22.55	8.58	25
	(42.43)	(31.54)	(13.24)	(9.51)		(15.40)	(11.51)	(6.04)	(4.20)		(151.57)	(117.99)	(45.51)	(34.70)	
Quintile 2	14.26	9.67	4.60	2.57	150	13.40	9.23	4.20	2.44	92	17.95	11.38	6.32	3.12	58
	(7.28)	(5.95)	(3.57)	(2.13)		(6.12)	(5.50)	(2.93)	(1.77)		(10.19)	(7.21)	(5.23)	(3.20)	
Quintile 3	12.52	8.51	4.02	2.30	171	12.11	8.43	3.67	2.32	75	13.34	8.68	4.71	2.26	96
	(6.24)	(4.78)	(3.01)	(2.12)		(5.20)	(3.84)	(2.52)	(1.79)		(7.88)	(6.23)	(3.72)	(2.67)	
Quintile 4	12.29	7.96	4.03	2.36	178	11.04	7.16	3.11	2.04	34	13.25	8.58	4.74	2.60	144
	(6.95)	(4.64)	(3.45)	(2.11)		(5.29)	(3.07)	(2.42)	(1.63)		(7.87)	(5.50)	(3.93)	(2.39)	
Quintile 5	11.14	8.26	3.13	1.96	274	13.85	12.35	2.47	1.49	17	10.41	7.54	3.31	2.09	257
	(6.45)	(5.85)	(2.32)	(1.62)		(8.52)	(9.79)	(1.43)	(1.07)		(5.55)	(4.48)	(2.48)	(1.72)	
Total	15.48	10.67	4.87	2.80	901	14.77	10.19	4.54	2.78	321	17.16	11.81	5.66	2.83	580
	(25.10)	(19.11)	(8.07)	(5.71)		(11.35)	(8.78)	(4.55)	(3.11)		(42.47)	(32.26)	(12.99)	(9.29)	

	Dual earner					Dual earner with children					Dual earner without children				
Quintile 1	18.50	12.34	6.22	3.91	99	17.66	12.10	5.84	3.81	86	35.52	21.04	13.93	6.01	13
	(15.09)	(10.10)	(5.73)	(3.85)		(12.97)	(9.32)	(4.93)	(3.29)		(33.80)	(24.12)	(12.09)	(9.58)	
Quintile 2	13.18	9.14	4.06	2.54	254	13.04	9.13	3.91	2.49	226	15.45	9.33	6.50	3.37	28
	(6.54)	(5.33)	(2.78)	(1.94)		(6.57)	(5.42)	(2.64)	(1.85)		(5.58)	(3.35)	(3.77)	(2.86)	
Quintile 3	13.17	8.91	4.29	2.46	406	12.69	8.81	3.86	2.26	270	15.08	9.32	5.99	3.28	136
	(7.27)	(5.87)	(3.82)	(1.98)		(6.63)	(5.29)	(3.71)	(1.73)		(9.13)	(7.80)	(3.78)	(2.58)	
Quintile 4	12.45	8.05	3.97	2.59	576	12.62	8.15	3.81	2.61	236	12.19	7.91	4.22	2.56	340
	(7.79)	(4.94)	(2.77)	(1.93)		(8.98)	(5.43)	(2.74)	(1.85)		(5.41)	(4.06)	(2.80)	(2.05)	
Quintile 5	10.66	7.21	3.17	2.07	714	10.18	6.85	2.75	1.80	145	10.95	7.42	3.42	2.23	569
	(5.95)	(4.59)	(2.67)	(1.69)		(5.81)	(3.96)	(3.04)	(1.69)		(6.01)	(4.91)	(2.39)	(1.67)	
Total	12.95	8.72	4.10	2.56	2049	13.10	8.97	3.98	2.54	963	12.59	8.10	4.40	2.62	1086
	(8.31)	(6.01)	(3.49)	(2.20)		(8.34)	(6.05)	(3.46)	(2.11)		(8.23)	(5.85)	(3.54)	(2.39)	
	None employed					None employed with children					None employed without children				
Quintile 1	19.59	12.34	7.09	3.0	270	18.88	11.95	6.81	2.72	119	22.21	13.86	8.12	4.06	151
	(19.31)	(14.68)	(7.46)	(4.37)		(13.63)	(9.77)	(6.58)	(3.19)		(32.57)	(26.01)	(10.02)	(7.14)	
Quintile 2	13.51	8.98	4.20	2.28	340	10.68	7.06	3.49	1.82	35	15.45	10.21	4.68	2.59	305
	(11.50)	(9.71)	(4.01)	(2.39)		(7.56)	(4.82)	(3.65)	(1.74)		(13.21)	(11.65)	(4.17)	(2.71)	
Quintile 3	12.63	8.03	4.40	2.17	245	11.55	8.39	3.38	1.16	6	12.69	8.01	4.45	2.23	239
	(7.95)	(5.34)	(4.59)	(1.85)		(3.82)	(1.97)	(2.60)	(0.49)		(8.12)	(5.46)	(4.67)	(1.89)	
Quintile 4	12.08	8.43	3.49	2.14	184	10.77	7.24	3.16	1.69	13	12.37	8.68	3.57	2.24	171
	(7.23)	(6.23)	(2.79)	(1.80)		(4.96)	(3.80)	(1.62)	(1.28)		(7.61)	(6.60)	(2.99)	(1.88)	
Quintile 5	12.38	9.33	2.87	1.68	122	13.38	10.63	2.72	2.21	5	12.26	9.12	2.88	1.62	117
	(7.34)	(6.88)	(2.06)	(1.47)		(2.39)	(3.40)	(1.23)	(1.39)		(7.74)	(7.27)	(2.14)	(1.47)	
Total	15.60	10.14	5.22	2.50	1161	16.37	10.54	5.74	2.43	178	14.93	9.80	4.77	2.56	983
	(14.70)	(11.26)	(5.79)	(3.24)		(12.50)	(8.77)	(5.96)	(2.83)		(16.34)	(13.0)	(5.59)	(3.55)	

Table 9: Incidence by sex composition, presence of children and quintiles

	Total Tax	VAT	Excises	Fuel	No. of HHs	Total Tax	VAT	Excises	Fuel	No. of HHs	Total Tax	VAT	Excises	Fuel	No. of HHs
	Male Dominated					Male Dominated with children					Male Dominated without children				
Quintile 1	28.49	13.83	10.29	3.62	1348	25.66	11.76	8.87	3.43	60	39.27	22.39	15.71	4.36	139
	(94.36)	(27.08)	(39.41)	(5.83)		(87.06)	(10.38)	(26.08)	(5.19)		(117.62)	(56.94)	(69.66)	(7.75)	
Quintile 2	13.43	8.56	4.16	2.50	1348	12.49	8.66	3.19	2.21	53	15.59	8.33	6.39	3.17	142
	(8.63)	(5.63)	(3.65)	(2.48)		(8.40)	(5.66)	(2.16)	(1.77)		(8.75)	(5.57)	(5.11)	(3.53)	
Quintile 3	12.61	7.30	5.09	2.60	1348	13.06	8.14	4.65	2.53	47	12.18	6.53	5.53	2.68	191
	(6.69)	(4.93)	(3.88)	(1.94)		(5.62)	(3.92)	(2.65)	(1.56)		(7.58)	(5.60)	(4.76)	(2.25)	
Quintile 4	12.05	7.81	4.34	2.63	1348	12.81	8.29	4.74	2.96	45	11.56	7.58	4.09	2.43	264
	(5.91)	(4.66)	(3.02)	(2.31)		(4.65)	(3.26)	(3.13)	(2.18)		(6.55)	(5.19)	(2.91)	(2.37)	
Quintile 5	10.87	6.48	3.80	2.41	1348	11.82	5.85	4.48	2.84	25	10.55	6.64	3.57	2.26	382
	(7.01)	(4.93)	(3.73)	(2.23)		(8.36)	(3.10)	(5.94)	(2.87)		(6.46)	(5.30)	(2.54)	(1.95)	
Total	15.84	9.05	5.69	2.79	1348	16.87	9.48	5.68	2.84	51	14.65	8.58	5.71	2.72	249
	(45.08)	(14.19)	(18.86)	(3.40)		(50.20)	(7.46)	(15.23)	(3.40)		(38.29)	(18.87)	(22.33)	(3.40)	
	Female Dominated					Female Dominated with children					Female Dominated without children				
Quintile 1	21.81	14.39	7.82	3.86	2008	17.42	11.63	5.87	2.87	302	90.14	63.66	38.28	19.17	110
	(170.30)	(109.52)	(71.50)	(51.53)		(18.23)	(12.12)	(7.42)	(5.71)		(687.41)	(471.03)	(288.52)	(208.44)	
Quintile 2	13.40	8.98	4.33	2.35	2008	13.23	8.98	4.26	2.45	130	14.0	9.0	4.62	2.0	313
	(7.51)	(5.92)	(3.41)	(2.21)		(6.65)	(5.70)	(2.73)	(1.89)		(10.05)	(6.59)	(5.20)	(3.11)	
Quintile 3	12.27	8.40	3.98	2.23	2008	12.44	8.60	3.96	2.18	108	11.93	8.02	4.0	2.33	288
	(5.99)	(4.69)	(3.04)	(2.03)		(5.38)	(4.42)	(2.72)	(1.59)		(7.02)	(5.15)	(3.58)	(2.68)	
Quintile 4	11.45	7.26	3.87	2.52	2008	11.35	6.88	3.80	2.68	66	11.54	7.59	3.94	2.35	313
	(6.10)	(4.61)	(2.92)	(2.13)		(5.64)	(4.54)	(2.26)	(1.96)		(6.52)	(4.65)	(3.44)	(2.28)	
Quintile 5	11.51	8.72	3.12	1.89	2008	11.72	9.29	3.02	1.67	40	11.40	8.45	3.17	2.0	338
	(5.83)	(5.64)	(2.20)	(1.45)		(6.04)	(6.46)	(2.19)	(1.38)		(5.72)	(5.18)	(2.20)	(1.47)	
Total	15.84	10.71	5.37	2.86	2008	14.86	10.08	4.88	2.59	198	18.48	12.38	6.69	3.59	298
	(104.26)	(68.53)	(43.78)	(31.53)		(13.61)	(9.52)	(5.57)	(4.17)		(198.89)	(130.21)	(83.55)	(60.14)	

	Equal # men and women					Equal # men and women with children					Equal # men and women without children				
Quintile 1	17.36	11.51	5.65	3.22	3422	16.18	10.71	5.25	3.04	291	26.79	18.17	8.93	4.71	167
	(17.68)	(13.87)	(6.20)	(4.17)		(11.95)	(9.55)	(4.86)	(3.36)		(39.70)	(31.39)	(12.07)	(7.99)	
Quintile 2	13.26	8.99	4.13	2.48	3422	12.56	8.49	3.95	2.46	298	15.70	10.64	4.78	2.58	362
	(8.92)	(7.37)	(3.46)	(2.13)		(6.75)	(4.93)	(3.13)	(1.95)		(13.77)	(12.20)	(4.36)	(2.63)	
Quintile 3	13.40	9.19	4.12	2.33	3422	12.71	8.94	3.65	2.25	289	15.01	9.76	5.24	2.52	403
	(8.16)	(6.18)	(4.37)	(2.04)		(7.16)	(5.43)	(4.08)	(1.88)		(9.93)	(7.61)	(4.82)	(2.35)	
Quintile 4	12.94	8.61	3.91	2.35	3422	13.06	8.67	3.72	2.27	233	12.78	8.53	4.15	2.47	504
	(10.96)	(8.31)	(4.22)	(1.79)		(13.26)	(9.82)	(4.87)	(1.66)		(6.64)	(5.54)	(3.11)	(1.94)	
Quintile 5	10.54	7.51	2.90	1.84	3422	9.82	7.14	2.28	1.49	149	10.96	7.72	3.27	2.05	726
	(6.35)	(5.50)	(2.25)	(1.54)		(5.90)	(5.30)	(1.64)	(1.14)		(6.57)	(5.60)	(2.47)	(1.70)	
Total	13.65	9.28	4.21	2.48	3422	13.43	9.13	4.06	2.46	270	14.12	9.59	4.52	2.52	510
	(11.51)	(9.03)	(4.45)	(2.61)		(9.84)	(7.55)	(4.16)	(2.38)		(14.43)	(11.58)	(4.98)	(3.04)	

Table 10: Tax incidence for each consumption category by HH employment status and income quintile (standard errors in parentheses)

Categories	Male Breadwinner						Female Breadwinner					
	1	2	3	4	5	Total	1	2	3	4	5	Total
Food subtotal	0.21	0.14	0.09	0.06	0.04	0.12	0.32	0.12	0.09	0.06	0.05	0.16
	(0.41)	(0.15)	(0.08)	(0.07)	(0.05)	(0.26)	(1.11)	(0.10)	(0.11)	(0.07)	(0.06)	(0.65)
*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	0.21	0.14	0.09	0.06	0.04	0.12	0.32	0.12	0.09	0.06	0.05	0.16
	(0.41)	(0.15)	(0.08)	(0.07)	(0.05)	(0.26)	(1.11)	(0.10)	(0.11)	(0.07)	(0.06)	(0.65)
Meals out	0.99	0.73	0.64	0.53	0.55	0.74	1.43	0.81	0.65	0.51	0.42	0.89
	(1.54)	(0.66)	(0.63)	(0.54)	(0.69)	(1.03)	(3.08)	(0.77)	(0.55)	(0.43)	(0.39)	(1.86)
Non-alcoholic beverages	0.20	0.15	0.10	0.07	0.05	0.13	0.50	0.17	0.12	0.10	0.06	0.24
	(0.18)	(0.13)	(0.08)	(0.06)	(0.06)	(0.14)	(2.12)	(0.12)	(0.10)	(0.11)	(0.06)	(1.22)
Alcoholic beverages subtotal	0.96	1.33	1.18	1.34	1.06	1.15	2.07	1.30	1.12	1.27	0.90	1.46
	(2.35)	(1.70)	(1.73)	(1.92)	(1.33)	(1.93)	(6.78)	(1.96)	(1.66)	(1.88)	(1.11)	(4.14)
*Beer and Cider	0.39	0.45	0.36	0.46	0.33	0.40	0.30	0.36	0.25	0.29	0.18	0.29
	(0.91)	(0.77)	(0.86)	(0.80)	(0.69)	(0.83)	(1.21)	(0.61)	(0.56)	(0.54)	(0.35)	(0.82)
*Spirits	0.25	0.48	0.37	0.38	0.15	0.32	1.02	0.47	0.47	0.51	0.21	0.62
	(0.97)	(1.01)	(0.96)	(1.15)	(0.42)	(0.95)	(3.44)	(1.31)	(1.16)	(1.21)	(0.67)	(2.19)
*Wine	0.32	0.40	0.45	0.50	0.57	0.42	0.75	0.47	0.40	0.47	0.51	0.55
	(1.46)	(0.66)	(0.79)	(1.21)	(0.90)	(1.11)	(4.53)	(0.91)	(0.59)	(0.98)	(0.74)	(2.67)
Tobacco	1.45	0.91	0.87	0.96	0.32	1.00	1.65	1.22	1.03	0.82	0.46	1.17
	(3.43)	(2.73)	(2.34)	(2.06)	(1.08)	(2.69)	(3.63)	(2.58)	(2.22)	(2.10)	(1.34)	(2.77)
Clothing and footwear subtotal	0.86	0.54	0.49	0.48	0.40	0.60	1.57	0.66	0.83	0.44	0.58	0.95
	(1.78)	(0.83)	(0.74)	(0.83)	(0.74)	(1.21)	(7.02)	(0.82)	(1.24)	(0.56)	(0.92)	(4.09)
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0

*Adult clothing	0.86	0.54	0.49	0.48	0.40	0.60	1.57	0.66	0.83	0.44	0.58	0.95
	(1.78)	(0.83)	(0.74)	(0.83)	(0.74)	(1.21)	(7.02)	(0.82)	(1.24)	(0.56)	(0.92)	(4.09)
Housing, Water, Electricity, Gas Subtotal	0.99	0.75	1.13	1.19	1.35	1.04	1.78	0.91	0.90	0.85	1.04	1.20
	(2.33)	(2.09)	(2.34)	(2.95)	(3.89)	(2.66)	(5.17)	(2.48)	(2.18)	(1.97)	(2.39)	(3.51)
*Housing	0.79	0.62	1.01	1.08	1.27	0.90	1.50	0.73	0.75	0.72	0.94	1.01
	(2.31)	(2.07)	(2.33)	(2.94)	(3.89)	(2.66)	(5.16)	(2.46)	(2.17)	(1.97)	(2.39)	(3.50)
*Water	0	0	0	0	0	0	0	0	0	0	0	0
*Electricity	0.11	0.08	0.06	0.05	0.04	0.08	0.15	0.09	0.08	0.07	0.05	0.10
	(0.12)	(0.06)	(0.04)	(0.04)	(0.03)	(0.08)	(0.19)	(0.08)	(0.05)	(0.05)	(0.04)	(0.12)
*Gas	0.08	0.06	0.06	0.05	0.04	0.06	0.13	0.08	0.07	0.06	0.05	0.09
	(0.11)	(0.07)	(0.05)	(0.05)	(0.03)	(0.08)	(0.21)	(0.10)	(0.06)	(0.06)	(0.04)	(0.14)
*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use	0.08	0.03	0.01	0.01	0.01	0.04	0.03	0.02	0.01	0.01	0.01	0.02
	(0.24)	(0.10)	(0.05)	(0.05)	(0.04)	(0.15)	(0.10)	(0.07)	(0.05)	(0.05)	(0.05)	(0.07)
Furniture, HH Equipment and Maintenance	0.92	0.71	1.02	0.59	0.96	0.85	1.16	1.15	0.84	0.88	0.91	1.02
	(1.72)	(1.17)	(1.64)	(1.71)	(2.53)	(1.76)	(2.42)	(1.97)	(1.55)	(1.88)	(1.71)	(2.02)
Domestic and household services	0.03	0.02	0.03	0.03	0.06	0.03	0.01	0.02	0.05	0.18	0.05	0.05
	(0.53)	(0.08)	(0.11)	(0.25)	(0.16)	(0.33)	(0.08)	(0.13)	(0.23)	(1.02)	(0.19)	(0.40)
Health	0.06	0.07	0.06	0.06	0.07	0.07	0.07	0.20	0.13	0.13	0.07	0.12
	(0.21)	(0.14)	(0.17)	(0.18)	(0.18)	(0.18)	(0.26)	(0.75)	(0.48)	(0.45)	(0.18)	(0.48)
Transportation Subtotal	1.97	1.96	2.40	2.27	1.48	2.02	2.12	1.58	1.56	1.54	1.77	1.77
	(2.53)	(4.03)	(4.39)	(6.24)	(1.90)	(3.89)	(3.97)	(2.17)	(1.94)	(1.79)	(2.43)	(2.85)
*Collective forms of transport	0.29	0.22	0.16	0.21	0.11	0.22	0.43	0.18	0.19	0.13	0.15	0.25
	(0.73)	(0.55)	(0.48)	(0.55)	(0.28)	(0.58)	(1.22)	(0.34)	(0.43)	(0.30)	(0.28)	(0.76)
*Flights	0.02	0.11	0.49	0.68	0.26	0.25	0.00	0.14	0.07	0.08	0.17	0.08
	(0.24)	(1.32)	(3.58)	(5.82)	(1.08)	(2.78)	0.00	(1.30)	(0.81)	(1.06)	(1.10)	(0.90)
*Private Transport	1.66	1.63	1.74	1.38	1.12	1.55	1.70	1.26	1.30	1.32	1.45	1.44
	(2.41)	(3.79)	(2.47)	(2.06)	(1.46)	(2.65)	(3.75)	(1.61)	(1.63)	(1.47)	(2.25)	(2.57)
School Transport	0	0	0	0	0	0	0	0	0	0	0	0

Fuel for transport	3.60	3.12	2.87	2.68	1.96	3.00	4.21	3.02	2.66	2.81	2.29	3.22
	(4.42)	(3.00)	(2.58)	(2.62)	(2.03)	(3.36)	(11.99)	(2.80)	(2.76)	(2.68)	(2.13)	(7.20)
Communication	0.61	0.48	0.36	0.31	0.24	0.44	1.09	0.55	0.42	0.36	0.33	0.65
	(0.63)	(0.42)	(0.30)	(0.32)	(0.24)	(0.47)	(2.18)	(0.55)	(0.32)	(0.31)	(0.29)	(1.32)
Recreation	1.62	1.76	1.76	1.33	1.27	1.58	1.95	1.74	1.43	1.74	1.74	1.75
	(2.58)	(2.20)	(2.21)	(1.77)	(2.01)	(2.26)	(9.02)	(1.91)	(1.29)	(1.80)	(2.71)	(5.37)
Education	0	0	0	0	0	0	0	0	0	0	0	0
Personal care subtotal	0.51	0.41	0.34	0.28	0.19	0.38	0.63	0.41	0.36	0.36	0.28	0.45
	(1.05)	(0.35)	(0.37)	(0.39)	(0.29)	(0.67)	(1.54)	(0.44)	(0.42)	(0.53)	(0.36)	(0.96)
*Necessities	0.13	0.11	0.09	0.08	0.05	0.10	0.22	0.16	0.11	0.10	0.06	0.15
	(0.21)	(0.11)	(0.09)	(0.07)	(0.06)	(0.14)	(0.36)	(0.14)	(0.10)	(0.12)	(0.07)	(0.23)
*Baby products	0.09	0.07	0.06	0.04	0.03	0.06	0.03	0.02	0.01	0.01	0.00	0.02
	(0.16)	(0.11)	(0.11)	(0.24)	(0.16)	(0.16)	(0.11)	(0.07)	(0.04)	(0.04)	(0.01)	(0.08)
*Other	0.29	0.23	0.18	0.16	0.12	0.22	0.37	0.23	0.24	0.25	0.22	0.28
	(0.93)	(0.29)	(0.30)	(0.25)	(0.24)	(0.58)	(1.49)	(0.37)	(0.37)	(0.50)	(0.35)	(0.91)
Gambling	0.06	0.05	0.07	0.05	0.03	0.06	0.10	0.06	0.06	0.07	0.02	0.07
	(0.19)	(0.11)	(0.17)	(0.11)	(0.09)	(0.15)	(0.39)	(0.11)	(0.13)	(0.14)	(0.05)	(0.24)
Miscellaneous	0.21	0.22	0.26	0.14	0.18	0.21	0.42	0.33	0.29	0.15	0.17	0.31
	(0.44)	(0.51)	(0.68)	(0.28)	(0.55)	(0.51)	(0.81)	(0.82)	(0.61)	(0.36)	(0.39)	(0.70)
TOTAL	15.34	13.37	13.69	12.38	10.23	13.47	21.08	14.26	12.52	12.29	11.14	15.48
	(13.79)	(8.74)	(7.83)	(10.50)	(6.89)	(10.67)	(42.43)	(7.28)	(6.24)	(6.95)	(6.45)	(25.10)
Number of Households	171	159	189	249	402	1171	128	150	171	178	274	902

Categories	Dual earner						None employed					
	1	2	3	4	5	Total	1	2	3	4	5	Total
Food subtotal	0.16	0.12	0.08	0.06	0.04	0.08	0.20	0.13	0.07	0.08	0.04	0.14
	(0.15)	(0.11)	(0.08)	(0.06)	(0.05)	(0.10)	(0.24)	(0.13)	(0.08)	(0.10)	(0.06)	(0.19)
*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	0.16	0.12	0.08	0.06	0.04	0.08	0.20	0.13	0.07	0.08	0.04	0.14
	(0.15)	(0.11)	(0.08)	(0.06)	(0.05)	(0.10)	(0.24)	(0.13)	(0.08)	(0.10)	(0.06)	(0.19)
Meals out	1.08	0.78	0.68	0.65	0.55	0.70	1.20	0.70	0.59	0.48	0.54	0.85
	(1.35)	(0.64)	(0.56)	(0.56)	(0.45)	(0.69)	(1.43)	(0.79)	(0.78)	(0.56)	(0.58)	(1.11)
Non-alcoholic beverages	0.17	0.13	0.10	0.08	0.05	0.10	0.31	0.12	0.09	0.07	0.06	0.18
	(0.18)	(0.10)	(0.08)	(0.06)	(0.05)	(0.10)	(0.44)	(0.11)	(0.08)	(0.06)	(0.06)	(0.31)
Alcoholic beverages subtotal	1.39	1.23	1.41	1.29	1.10	1.28	1.75	1.28	1.29	1.25	1.24	1.46
	(2.50)	(1.53)	(1.58)	(1.22)	(1.34)	(1.56)	(3.24)	(2.18)	(1.83)	(1.66)	(1.64)	(2.56)
*Beer and Cider	0.38	0.41	0.51	0.45	0.31	0.42	0.54	0.36	0.40	0.32	0.16	0.42
	(0.94)	(0.59)	(0.69)	(0.66)	(0.51)	(0.66)	(1.23)	(0.69)	(0.85)	(0.59)	(0.29)	(0.95)
*Spirits	0.35	0.36	0.43	0.32	0.28	0.35	0.79	0.46	0.43	0.34	0.27	0.56
	(1.02)	(0.82)	(0.90)	(0.61)	(0.76)	(0.80)	(2.28)	(1.23)	(1.01)	(0.77)	(0.59)	(1.67)
*Wine	0.66	0.46	0.47	0.52	0.51	0.51	0.42	0.46	0.45	0.60	0.80	0.48
	(1.55)	(0.72)	(0.72)	(0.71)	(0.65)	(0.82)	(1.44)	(1.33)	(1.02)	(1.07)	(1.36)	(1.32)
Tobacco	1.46	0.78	0.80	0.51	0.27	0.67	3.45	1.09	1.06	0.43	0.39	1.92
	(3.34)	(1.73)	(1.78)	(1.34)	(0.84)	(1.76)	(5.58)	(2.50)	(2.32)	(1.15)	(1.26)	(4.12)
Clothing and footwear subtotal	0.90	0.66	0.63	0.55	0.52	0.62	1.42	0.55	0.62	0.65	0.59	0.92
	(1.81)	(0.74)	(0.84)	(0.63)	(0.69)	(0.89)	(2.57)	(0.89)	(1.07)	(0.97)	(0.77)	(1.83)
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0
*Adult clothing	0.90	0.66	0.63	0.55	0.52	0.62	1.42	0.55	0.62	0.65	0.59	0.92
	(1.81)	(0.74)	(0.84)	(0.63)	(0.69)	(0.89)	(2.57)	(0.89)	(1.07)	(0.97)	(0.77)	(1.83)
Housing, Water, Electricity, Gas Subtotal	1.09	0.85	1.16	1.28	1.07	1.10	1.23	0.90	0.97	1.44	1.65	1.16
	(1.93)	(1.92)	(3.36)	(5.33)	(2.98)	(3.58)	(6.29)	(2.07)	(1.88)	(3.41)	(4.44)	(4.52)
*Housing	0.87	0.72	1.05	1.19	1.0	0.99	0.97	0.71	0.82	1.31	1.55	0.96
	(1.90)	(1.92)	(3.35)	(5.33)	(2.98)	(3.58)	(6.13)	(2.05)	(1.88)	(3.41)	(4.44)	(4.42)
*Water	0	0	0	0	0	0	0	0	0	0	0	0
*Electricity	0.13	0.08	0.06	0.05	0.04	0.06	0.14	0.10	0.09	0.08	0.05	0.11

	(0.12)	(0.05)	(0.04)	(0.03)	(0.03)	(0.06)	(0.21)	(0.08)	(0.05)	(0.05)	(0.03)	(0.15)
*Gas	0.08	0.06	0.05	0.04	0.04	0.05	0.12	0.09	0.07	0.06	0.05	0.09
	(0.11)	(0.05)	(0.04)	(0.03)	(0.03)	(0.05)	(0.18)	(0.09)	(0.06)	(0.05)	(0.04)	(0.13)
*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use	0.05	0.02	0.01	0.01	0.01	0.02	0.03	0.02	0.03	0.03	0.02	0.03
	(0.16)	(0.06)	(0.05)	(0.05)	(0.04)	(0.07)	(0.11)	(0.09)	(0.08)	(0.08)	(0.06)	(0.10)
Furniture, HH Equipment and Maintenance	1.52	0.83	0.71	0.77	0.70	0.82	1.34	1.31	0.84	0.95	0.87	1.18
	(3.57)	(1.48)	(1.28)	(1.49)	(1.32)	(1.73)	(2.53)	(5.11)	(1.81)	(1.71)	(1.52)	(3.26)
Domestic and household services	0.03	0.01	0.01	0.04	0.11	0.04	0.02	0.02	0.04	0.06	0.17	0.04
	(0.20)	(0.07)	(0.06)	(0.18)	(0.82)	(0.40)	(0.05)	(0.07)	(0.19)	(0.22)	(0.75)	(0.23)
Health	0.05	0.07	0.07	0.08	0.07	0.07	0.13	0.18	0.17	0.11	0.21	0.15
	(0.25)	(0.23)	(0.27)	(0.23)	(0.15)	(0.23)	(1.22)	(0.95)	(0.79)	(0.42)	(0.59)	(0.99)
Transportation Subtotal	2.41	1.64	1.86	1.53	1.61	1.73	1.51	1.61	1.76	1.48	1.93	1.60
	(4.11)	(2.16)	(3.34)	(1.95)	(2.25)	(2.70)	(1.99)	(2.65)	(3.87)	(2.49)	(2.58)	(2.61)
*Collective forms of transport	0.24	0.18	0.13	0.15	0.16	0.16	0.32	0.15	0.07	0.05	0.09	0.19
	(0.71)	(0.42)	(0.29)	(0.30)	(0.36)	(0.39)	(0.68)	(0.32)	(0.28)	(0.18)	(0.28)	(0.50)
*Flights	0.22	0.06	0.22	0.11	0.15	0.14	0	0.10	0.37	0.10	0.01	0.09
	(2.0)	(0.59)	(2.74)	(1.26)	(1.53)	(1.78)	0	(1.01)	(3.26)	(1.36)	(0.08)	(1.41)
*Private Transport	1.95	1.41	1.51	1.28	1.30	1.43	1.19	1.36	1.33	1.33	1.83	1.32
	(3.45)	(2.07)	(1.90)	(1.30)	(1.51)	(1.94)	(1.88)	(2.49)	(2.02)	(2.03)	(2.54)	(2.15)
School Transport	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for transport	4.65	2.99	2.96	3.09	2.41	3.04	3.40	2.69	2.66	2.65	2.02	2.92
	(4.76)	(2.46)	(2.49)	(2.48)	(2.12)	(2.76)	(5.51)	(3.08)	(2.32)	(2.27)	(1.71)	(4.07)
Communication	0.83	0.42	0.36	0.31	0.24	0.38	0.89	0.38	0.29	0.25	0.25	0.55
	(1.05)	(0.35)	(0.32)	(0.31)	(0.23)	(0.46)	(1.08)	(0.29)	(0.27)	(0.18)	(0.29)	(0.77)
Recreation	1.53	1.84	1.68	1.57	1.35	1.60	1.81	1.84	1.57	1.62	1.78	1.76
	(2.01)	(2.34)	(2.47)	(2.16)	(1.41)	(2.14)	(2.65)	(3.79)	(2.43)	(2.34)	(2.09)	(2.91)
Education	0	0	0	0	0	0	0	0	0	0	0	0

Personal care subtotal	0.55	0.32	0.32	0.30	0.25	0.32	0.61	0.34	0.26	0.28	0.30	0.43
	(0.93)	(0.35)	(0.36)	(0.30)	(0.33)	(0.43)	(1.75)	(0.36)	(0.31)	(0.31)	(0.35)	(1.15)
*Necessities	0.17	0.11	0.10	0.09	0.07	0.10	0.22	0.12	0.09	0.08	0.06	0.15
	(0.19)	(0.11)	(0.09)	(0.09)	(0.10)	(0.11)	(0.49)	(0.13)	(0.09)	(0.10)	(0.07)	(0.33)
*Baby products	0.05	0.03	0.02	0.02	0.01	0.02	0.11	0.02	0.0	0.01	0.0	0.05
	(0.15)	(0.08)	(0.07)	(0.07)	(0.03)	(0.08)	(0.24)	(0.06)	(0.02)	(0.03)	(0.01)	(0.16)
*Other	0.32	0.18	0.20	0.19	0.17	0.20	0.28	0.21	0.16	0.19	0.24	0.23
	(0.87)	(0.30)	(0.31)	(0.25)	(0.28)	(0.38)	(1.29)	(0.30)	(0.29)	(0.25)	(0.35)	(0.85)
Gambling	0.06	0.06	0.08	0.05	0.03	0.05	0.17	0.11	0.18	0.08	0.02	0.14
	(0.11)	(0.09)	(0.16)	(0.12)	(0.06)	(0.12)	(0.41)	(0.26)	(0.49)	(0.17)	(0.04)	(0.35)
Miscellaneous	0.56	0.42	0.26	0.28	0.26	0.33	0.13	0.24	0.14	0.18	0.31	0.18
	(1.46)	(1.45)	(0.69)	(0.66)	(0.66)	(0.97)	(0.37)	(2.11)	(0.39)	(0.52)	(0.87)	(1.17)
TOTAL	18.50	13.18	13.17	12.45	10.66	12.95	19.59	13.51	12.63	12.08	12.38	15.60
	(15.09)	(6.54)	(7.27)	(7.79)	(5.95)	(8.31)	(19.31)	(11.50)	(7.95)	(7.23)	(7.34)	(14.70)
Number of Households	99	254	406	576	714	2051	270	340	245	184	122	1163

Equality of Means t-test with unequal variance at 5% significance level:

Table 11: Tax incidence for each consumption category by HH adult sex composition and income quintile (standard errors in parentheses)

Categories	Male Dominated						Female Dominated					
	1	2	3	4	5	Total	1	2	3	4	5	Total
Food subtotal	0.40	0.12	0.08	0.06	0.05	0.15	0.24	0.14	0.08	0.06	0.04	0.14
	(1.39)	(0.15)	(0.07)	(0.07)	(0.07)	(0.67)	(1.79)	(0.13)	(0.10)	(0.08)	(0.06)	(1.10)
*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	0.40	0.12	0.08	0.06	0.05	0.15	0.24	0.14	0.08	0.06	0.04	0.14
	(1.39)	(0.15)	(0.07)	(0.07)	(0.07)	(0.67)	(1.79)	(0.13)	(0.10)	(0.08)	(0.06)	(1.10)
Meals out	1.71	0.84	0.72	0.60	0.61	0.91	1.37	0.78	0.65	0.62	0.55	0.93
	(3.06)	(0.76)	(0.68)	(0.48)	(0.63)	(1.60)	(8.91)	(0.88)	(0.53)	(0.53)	(0.57)	(5.48)
Non-alcoholic beverages	0.48	0.15	0.11	0.08	0.06	0.18	0.34	0.16	0.11	0.08	0.06	0.20
	(2.01)	(0.14)	(0.11)	(0.07)	(0.06)	(0.96)	(1.55)	(0.12)	(0.09)	(0.08)	(0.06)	(0.96)
Alcoholic beverages subtotal	2.94	1.41	1.68	1.55	1.23	1.81	2.26	1.29	1.24	1.10	1.01	1.58
	(19.39)	(2.23)	(1.63)	(1.63)	(1.48)	(9.22)	(58.21)	(1.83)	(1.46)	(1.39)	(1.05)	(35.58)
*Beer and Cider	1.33	0.60	0.63	0.72	0.50	0.78	0.29	0.32	0.34	0.27	0.22	0.29
	(18.81)	(1.28)	(0.90)	(0.95)	(0.79)	(8.85)	(0.93)	(0.58)	(0.58)	(0.51)	(0.36)	(0.71)
*Spirits	1.04	0.47	0.62	0.42	0.22	0.58	1.51	0.50	0.47	0.41	0.28	0.84
	(3.53)	(1.09)	(1.04)	(1.03)	(0.52)	(1.88)	(58.12)	(1.13)	(0.90)	(0.95)	(0.59)	(35.51)
*Wine	0.56	0.34	0.43	0.41	0.50	0.45	0.46	0.47	0.43	0.41	0.51	0.46
	(1.55)	(0.88)	(0.71)	(0.69)	(0.97)	(1.02)	(2.85)	(0.87)	(0.62)	(0.70)	(0.65)	(1.83)
Tobacco	5.50	0.70	1.22	0.84	0.42	1.85	2.59	1.18	0.98	0.69	0.34	1.50
	(33.56)	(1.91)	(2.08)	(1.77)	(1.24)	(15.90)	(6.0)	(2.51)	(2.23)	(1.71)	(1.13)	(4.11)
Clothing and footwear subtotal	2.61	0.78	0.53	0.57	0.61	1.05	1.26	0.78	0.78	0.59	0.56	0.91
	(13.75)	(0.89)	(0.75)	(0.81)	(0.96)	(6.53)	(6.30)	(0.95)	(1.05)	(0.68)	(0.79)	(3.92)
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0

*Adult clothing	2.61	0.78	0.53	0.57	0.61	1.05	1.26	0.78	0.78	0.59	0.56	0.91
	(13.75)	(0.89)	(0.75)	(0.81)	(0.96)	(6.53)	(6.30)	(0.95)	(1.05)	(0.68)	(0.79)	(3.92)
Housing, Water, Electricity, Gas Subtotal	1.12	0.84	0.75	0.60	0.87	0.83	1.28	0.73	0.91	0.67	1.31	1.02
	(2.60)	(2.74)	(3.02)	(1.29)	(3.07)	(2.57)	(24.20)	(2.04)	(2.47)	(1.57)	(3.21)	(14.90)
*Housing	0.83	0.68	0.63	0.50	0.78	0.67	0.94	0.55	0.78	0.56	1.23	0.82
	(2.50)	(2.73)	(3.01)	(1.26)	(3.07)	(2.54)	(20.30)	(2.02)	(2.46)	(1.56)	(3.21)	(12.54)
*Water	0	0	0	0	0	0	0	0	0	0	0	0
*Electricity	0.16	0.09	0.06	0.06	0.05	0.09	0.18	0.10	0.07	0.06	0.04	0.11
	(0.25)	(0.07)	(0.05)	(0.04)	(0.03)	(0.13)	(2.39)	(0.09)	(0.06)	(0.05)	(0.03)	(1.46)
*Gas	0.13	0.07	0.06	0.04	0.04	0.07	0.16	0.08	0.06	0.05	0.04	0.10
	(0.30)	(0.08)	(0.06)	(0.04)	(0.05)	(0.15)	(1.58)	(0.09)	(0.06)	(0.05)	(0.04)	(0.97)
*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use	0.08	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.02	0.02	0.01	0.02
	(0.25)	(0.06)	(0.06)	(0.05)	(0.05)	(0.13)	(0.12)	(0.10)	(0.07)	(0.07)	(0.04)	(0.10)
Furniture, HH Equipment and Maintenance	1.02	0.79	0.49	0.65	0.53	0.70	1.30	0.95	0.72	0.73	0.71	0.98
	(4.36)	(1.62)	(0.93)	(1.54)	(1.24)	(2.38)	(15.40)	(1.84)	(1.39)	(1.27)	(1.23)	(9.48)
Domestic and household services	0.01	0.01	0.01	0.03	0.03	0.02	0.03	0.03	0.06	0.09	0.26	0.07
	(0.05)	(0.05)	(0.13)	(0.52)	(0.13)	(0.27)	(0.41)	(0.22)	(0.42)	(0.64)	(1.03)	(0.54)
Health	0.06	0.22	0.07	0.06	0.06	0.09	0.08	0.07	0.07	0.12	0.09	0.08
	(0.22)	(0.73)	(0.26)	(0.12)	(0.16)	(0.37)	(0.65)	(0.34)	(0.24)	(0.42)	(0.35)	(0.48)
Transportation Subtotal	4.53	2.09	1.74	1.52	1.65	2.35	1.88	1.70	1.47	1.30	2.01	1.70
	(31.69)	(2.90)	(2.98)	(1.64)	(3.16)	(15.05)	(8.09)	(2.48)	(1.70)	(1.15)	(2.29)	(5.19)
*Collective forms of transport	0.67	0.34	0.18	0.21	0.17	0.32	0.42	0.22	0.16	0.11	0.20	0.27
	(1.13)	(0.69)	(0.37)	(0.37)	(0.35)	(0.70)	(4.24)	(0.40)	(0.35)	(0.23)	(0.31)	(2.61)
*Flights	0.31	0.17	0.35	0.02	0.27	0.22	0.17	0.11	0.06	0.01	0.27	0.13
	(13.21)	(1.62)	(2.55)	(0.17)	(2.61)	(6.41)	(2.12)	(0.63)	(0.73)	(0.18)	(1.32)	(1.43)
*Private Transport	3.54	1.59	1.21	1.29	1.21	1.81	1.28	1.36	1.26	1.18	1.54	1.31
	(28.60)	(2.33)	(1.43)	(1.64)	(1.64)	(13.50)	(6.56)	(2.41)	(1.51)	(1.13)	(1.77)	(4.26)
School Transport	0	0	0	0	0	0	0	0	0	0	0	0

Fuel for transport	3.73	2.74	3.07	3.08	2.83	3.12	4.35	2.70	2.62	3.05	2.13	3.29
	(7.36)	(3.20)	(2.48)	(3.03)	(2.80)	(4.30)	(64.99)	(2.88)	(2.58)	(2.70)	(1.82)	(39.76)
Communication	1.27	0.48	0.40	0.37	0.28	0.58	1.15	0.55	0.42	0.35	0.29	0.70
	(2.62)	(0.35)	(0.39)	(0.42)	(0.26)	(1.32)	(12.50)	(0.48)	(0.32)	(0.32)	(0.24)	(7.65)
Recreation	2.01	1.64	1.31	1.60	1.28	1.59	2.59	1.60	1.40	1.49	1.45	1.90
	(3.95)	(2.17)	(1.81)	(1.95)	(2.0)	(2.55)	(17.57)	(1.78)	(1.42)	(2.84)	(2.04)	(10.87)
Education	0	0	0	0	0	0	0	0	0	0	0	0
Personal care subtotal	0.62	0.32	0.21	0.22	0.16	0.31	0.68	0.40	0.39	0.29	0.36	0.48
	(1.19)	(0.33)	(0.23)	(0.21)	(0.20)	(0.62)	(2.14)	(0.37)	(0.43)	(0.30)	(0.53)	(1.35)
*Necessities	0.20	0.10	0.09	0.09	0.05	0.11	0.22	0.15	0.11	0.10	0.08	0.15
	(0.46)	(0.07)	(0.08)	(0.08)	(0.06)	(0.23)	(1.69)	(0.13)	(0.10)	(0.10)	(0.10)	(1.04)
*Baby products	0.03	0.02	0.01	0.0	0.0	0.01	0.13	0.02	0.01	0.01	0.0	0.06
	(0.12)	(0.06)	(0.02)	(0.0)	(0.01)	(0.06)	(0.38)	(0.06)	(0.04)	(0.05)	(0.01)	(0.25)
*Other	0.38	0.19	0.12	0.13	0.11	0.19	0.32	0.23	0.28	0.18	0.28	0.27
	(0.99)	(0.30)	(0.20)	(0.17)	(0.18)	(0.51)	(1.17)	(0.32)	(0.40)	(0.26)	(0.47)	(0.77)
Gambling	0.13	0.06	0.10	0.07	0.04	0.09	0.09	0.07	0.08	0.05	0.03	0.07
	(0.30)	(0.18)	(0.20)	(0.14)	(0.09)	(0.20)	(0.38)	(0.18)	(0.21)	(0.13)	(0.05)	(0.27)
Miscellaneous	0.28	0.23	0.11	0.12	0.15	0.18	0.29	0.25	0.25	0.15	0.31	0.26
	(0.72)	(0.55)	(0.33)	(0.28)	(0.68)	(0.54)	(0.67)	(0.67)	(0.67)	(0.32)	(1.02)	(0.68)
TOTAL	28.49	13.43	12.61	12.05	10.87	15.84	21.81	13.40	12.27	11.45	11.51	15.84
	(94.36)	(8.63)	(6.69)	(5.91)	(7.01)	(45.08)	(170.30)	(7.51)	(5.99)	(6.10)	(5.83)	(104.26)
Number of Households	199	195	238	309	407	1348	412	443	396	379	378	2008

Categories	Equal # Males & Females					
	1	2	3	4	5	Total
Food subtotal	0.20	0.12	0.08	0.06	0.04	0.11
	(0.24)	(0.12)	(0.09)	(0.07)	(0.05)	(0.15)
*Basic unprocessed	0	0	0	0	0	0

*Basic processed	0	0	0	0	0	0
*Sugar/confectionary and others	0.20	0.12	0.08	0.06	0.04	0.11
	(0.24)	(0.12)	(0.09)	(0.07)	(0.05)	(0.15)
Meals out	1.04	0.71	0.63	0.59	0.52	0.71
	(1.54)	(0.70)	(0.62)	(0.60)	(0.48)	(0.92)
Non-alcoholic beverages	0.23	0.12	0.10	0.08	0.05	0.12
	(0.35)	(0.11)	(0.08)	(0.07)	(0.06)	(0.19)
Alcoholic beverages subtotal	1.22	1.22	1.22	1.25	1.08	1.20
	(2.51)	(1.73)	(1.71)	(1.47)	(1.44)	(1.84)
*Beer and Cider	0.39	0.38	0.42	0.36	0.26	0.37
	(1.0)	(0.64)	(0.75)	(0.57)	(0.48)	(0.72)
*Spirits	0.34	0.38	0.34	0.30	0.25	0.33
	(1.15)	(0.98)	(0.94)	(0.66)	(0.75)	(0.93)
*Wine	0.49	0.46	0.47	0.59	0.57	0.51
	(1.65)	(0.96)	(0.82)	(0.99)	(0.86)	(1.11)
Tobacco	1.93	0.92	0.76	0.48	0.27	0.92
	(4.24)	(2.40)	(2.09)	(1.41)	(0.85)	(2.63)
Clothing and footwear subtotal	0.89	0.52	0.57	0.52	0.46	0.60
	(1.94)	(0.77)	(0.88)	(0.72)	(0.64)	(1.14)
*Children's clothing	0	0	0	0	0	0
*Adult clothing	0.89	0.52	0.57	0.52	0.46	0.60
	(1.94)	(0.77)	(0.88)	(0.72)	(0.64)	(1.14)
Housing, Water, Electricity, Gas Subtotal	1.35	0.91	1.28	1.85	1.22	1.30
	(5.37)	(2.09)	(3.30)	(7.10)	(3.35)	(4.54)

*Housing	1.11	0.75	1.15	1.74	1.15	1.16
	(5.27)	(2.08)	(3.29)	(7.10)	(3.35)	(4.51)
*Water	0	0	0	0	0	0
*Electricity	0.14	0.08	0.07	0.06	0.04	0.08
	(0.18)	(0.06)	(0.04)	(0.04)	(0.03)	(0.10)
*Gas	0.10	0.07	0.06	0.05	0.04	0.06
	(0.14)	(0.08)	(0.05)	(0.04)	(0.03)	(0.08)
*Other (inc. sewerage)	0	0	0	0	0	0
Fuel for HH use	0.05	0.03	0.02	0.01	0.01	0.03
	(0.17)	(0.09)	(0.06)	(0.05)	(0.05)	(0.10)
Furniture, HH Equipment and Maintenance	1.43	1.01	0.92	0.84	0.85	1.02
	(2.60)	(3.23)	(1.64)	(1.75)	(1.84)	(2.37)
Domestic and household services	0.03	0.02	0.03	0.05	0.07	0.04
	(0.39)	(0.09)	(0.12)	(0.23)	(0.66)	(0.35)
Health	0.11	0.10	0.10	0.09	0.09	0.10
	(0.93)	(0.58)	(0.45)	(0.29)	(0.26)	(0.58)
Transportation Subtotal	1.82	1.55	2.04	1.81	1.50	1.75
	(2.97)	(2.79)	(4.02)	(3.91)	(1.91)	(3.22)
*Collective forms of transport	0.17	0.13	0.11	0.14	0.12	0.13
	(0.51)	(0.34)	(0.34)	(0.36)	(0.33)	(0.39)
*Flights	0.02	0.05	0.31	0.31	0.10	0.15
	(0.23)	(0.83)	(3.29)	(3.32)	(0.77)	(2.12)
*Private Transport	1.63	1.36	1.63	1.36	1.28	1.46
	(2.90)	(2.66)	(2.26)	(1.84)	(1.68)	(2.37)
School Transport	0	0	0	0	0	0

Fuel for transport	3.86	2.98	2.82	2.80	2.18	2.97
	(5.29)	(2.70)	(2.56)	(2.24)	(1.93)	(3.30)
Communication	0.70	0.39	0.33	0.27	0.23	0.40
	(0.73)	(0.34)	(0.28)	(0.25)	(0.24)	(0.45)
Recreation	1.58	1.89	1.81	1.57	1.43	1.67
	(2.60)	(2.97)	(2.65)	(1.98)	(1.69)	(2.48)
Education	0	0	0	0	0	0
Personal care subtotal	0.55	0.35	0.33	0.32	0.23	0.36
	(1.48)	(0.37)	(0.37)	(0.38)	(0.28)	(0.76)
*Necessities	0.18	0.11	0.10	0.09	0.06	0.11
	(0.39)	(0.13)	(0.10)	(0.10)	(0.09)	(0.21)
*Baby products	0.09	0.04	0.04	0.03	0.01	0.05
	(0.18)	(0.09)	(0.09)	(0.14)	(0.09)	(0.13)
*Other	0.27	0.19	0.19	0.21	0.16	0.21
	(1.14)	(0.31)	(0.31)	(0.31)	(0.24)	(0.59)
Gambling	0.10	0.07	0.09	0.05	0.03	0.07
	(0.25)	(0.17)	(0.26)	(0.13)	(0.07)	(0.20)
Miscellaneous	0.27	0.36	0.29	0.30	0.26	0.30
	(0.89)	(1.72)	(0.70)	(0.71)	(0.68)	(1.06)
TOTAL	17.36	13.26	13.40	12.94	10.54	13.65
	(17.68)	(8.92)	(8.16)	(10.96)	(6.35)	(11.51)
Number of Households	458	660	692	737	875	3422

Equality of Means t-test with unequal variance at 5% significance level:

Table 12: Incidence of Total and Specific Types of Taxes by expenditure and income quintiles (standard errors in parentheses)

	Tax as a percentage of expenditure				
	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
By Quintile					
Quintile 1	10.73	6.44	4.21	2.42	1119
	(4.77)	(2.03)	(3.57)	(2.67)	
Quintile 2	11.99	7.40	4.49	2.44	1276
	(4.51)	(2.19)	(3.31)	(2.17)	
Quintile 3	11.97	7.84	4.08	2.48	1353
	(4.09)	(2.25)	(2.91)	(2.08)	
Quintile 4	11.74	7.97	3.68	2.21	1430
	(4.02)	(2.45)	(2.64)	(1.87)	
Quintile 5	11.22	8.26	3.0	1.81	1605
	(3.92)	(2.92)	(2.57)	(1.52)	
Total	11.50	7.47	3.95	2.30	6783
	(4.35)	(2.43)	(3.12)	(2.16)	

	Tax as a percentage of income				
	Total Tax	VAT	Excise Tax	Fuel Tax	Number of Households
By Quintile					
Quintile 1	20.51	12.84	7.08	3.51	1069
	(108.68)	(66.58)	(45.52)	(31.08)	
Quintile 2	13.32	8.94	4.18	2.46	1298
	(8.59)	(6.91)	(3.48)	(2.20)	
Quintile 3	13.02	8.70	4.26	2.36	1326
	(7.51)	(5.75)	(4.06)	(2.02)	
Quintile 4	12.46	8.19	3.99	2.44	1425
	(9.30)	(7.15)	(3.77)	(1.98)	
Quintile 5	10.77	7.55	3.08	1.94	1660
	(6.38)	(5.47)	(2.56)	(1.67)	
Total	14.54	9.58	4.73	2.62	6778
	(55.37)	(34.57)	(23.20)	(15.77)	

Table 13: Incidence of commodities by expenditure and income quintiles (standard errors in parentheses)

	Expenditure Quintiles					TOTAL	Income Quintiles					TOTAL
	1	2	3	4	5		1	2	3	4	5	
Food subtotal	0.14	0.11	0.09	0.07	0.05	0.09	0.24	0.13	0.08	0.06	0.04	0.12
	(0.13)	(0.11)	(0.09)	(0.07)	(0.06)	(0.11)	(1.20)	(0.13)	(0.09)	(0.07)	(0.06)	(0.62)
*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	0.14	0.11	0.09	0.07	0.05	0.09	0.24	0.13	0.08	0.06	0.04	0.12
	(0.13)	(0.11)	(0.09)	(0.07)	(0.06)	(0.11)	(1.20)	(0.13)	(0.09)	(0.07)	(0.06)	(0.62)
Meals out	0.66	0.72	0.68	0.62	0.52	0.65	1.25	0.74	0.65	0.60	0.54	0.80
	(0.64)	(0.59)	(0.58)	(0.50)	(0.53)	(0.58)	(5.57)	(0.75)	(0.61)	(0.56)	(0.52)	(2.87)
Non-alcoholic beverages	0.18	0.13	0.11	0.08	0.05	0.12	0.31	0.14	0.10	0.08	0.05	0.15
	(0.15)	(0.11)	(0.11)	(0.07)	(0.05)	(0.12)	(1.22)	(0.12)	(0.09)	(0.07)	(0.06)	(0.63)
Alcoholic beverages subtotal	0.82	1.30	1.35	1.28	1.0	1.14	1.83	1.26	1.31	1.28	1.09	1.39
	(1.47)	(1.76)	(1.67)	(1.50)	(1.31)	(1.57)	(35.65)	(1.83)	(1.66)	(1.50)	(1.39)	(18.03)
*Beer and Cider	0.29	0.49	0.44	0.40	0.25	0.38	0.48	0.40	0.44	0.42	0.29	0.42
	(0.65)	(0.88)	(0.73)	(0.71)	(0.45)	(0.71)	(7.09)	(0.76)	(0.75)	(0.68)	(0.53)	(3.63)
*Spirits	0.29	0.44	0.39	0.35	0.25	0.35	0.86	0.42	0.42	0.34	0.25	0.49
	(0.96)	(1.04)	(0.87)	(0.79)	(0.67)	(0.89)	(34.84)	(1.03)	(0.95)	(0.81)	(0.69)	(17.59)
*Wine	0.23	0.37	0.53	0.53	0.50	0.42	0.49	0.44	0.45	0.52	0.55	0.49
	(0.66)	(0.71)	(0.92)	(0.85)	(0.82)	(0.80)	(2.15)	(0.93)	(0.76)	(0.89)	(0.85)	(1.31)
Tobacco	1.47	1.33	0.79	0.62	0.29	0.96	2.66	0.95	0.89	0.60	0.31	1.21
	(2.92)	(2.64)	(1.98)	(1.55)	(0.96)	(2.27)	(13.44)	(2.37)	(2.12)	(1.56)	(0.98)	(7.03)
Clothing and footwear subtotal	0.49	0.60	0.60	0.56	0.53	0.55	1.26	0.62	0.61	0.54	0.50	0.75
	(0.76)	(0.77)	(0.75)	(0.75)	(0.71)	(0.75)	(6.54)	(0.84)	(0.90)	(0.74)	(0.73)	(3.39)
*Children's clothing	0	0	0	0	0	0	0	0	0	0	0	0
*Adult clothing	0.49	0.60	0.60	0.56	0.53	0.55	1.26	0.62	0.61	0.54	0.50	0.75
	(0.76)	(0.77)	(0.75)	(0.75)	(0.71)	(0.75)	(6.54)	(0.84)	(0.90)	(0.74)	(0.73)	(3.39)
Housing, Water, Electricity, Gas Subtotal	0.42	0.52	0.66	0.80	1.44	0.72	1.29	0.86	1.11	1.36	1.18	1.16
	(0.56)	(0.79)	(1.03)	(1.26)	(2.31)	(1.30)	(15.02)	(2.18)	(3.10)	(5.58)	(3.29)	(8.22)
*Housing	0.21	0.37	0.53	0.70	1.37	0.58	1.01	0.70	0.98	1.25	1.10	0.99
	(0.53)	(0.78)	(1.03)	(1.26)	(2.32)	(1.31)	(12.75)	(2.17)	(3.09)	(5.58)	(3.29)	(7.18)
*Water	0	0	0	0	0	0	0	0	0	0	0	0
*Electricity	0.12	0.08	0.07	0.06	0.04	0.08	0.16	0.09	0.07	0.06	0.04	0.09
	(0.11)	(0.07)	(0.05)	(0.04)	(0.03)	(0.07)	(1.44)	(0.07)	(0.05)	(0.04)	(0.03)	(0.73)

*Gas	0.09	0.07	0.06	0.05	0.04	0.06	0.13	0.07	0.06	0.05	0.04	0.07
	(0.11)	(0.08)	(0.06)	(0.04)	(0.04)	(0.08)	(0.96)	(0.08)	(0.05)	(0.04)	(0.04)	(0.49)
*Other (inc. sewerage)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for HH use	0.03	0.02	0.02	0.01	0.01	0.02	0.05	0.02	0.02	0.01	0.01	0.02
	(0.12)	(0.08)	(0.07)	(0.05)	(0.04)	(0.08)	(0.17)	(0.09)	(0.06)	(0.05)	(0.04)	(0.10)
Furniture, HH Equipment and Maintenance	0.55	0.64	0.75	0.81	0.84	0.70	1.33	0.96	0.80	0.77	0.78	0.96
	(0.75)	(0.94)	(1.10)	(1.17)	(1.31)	(1.05)	(9.54)	(2.79)	(1.50)	(1.63)	(1.66)	(5.12)
Domestic and household services	0.02	0.02	0.02	0.04	0.10	0.04	0.03	0.02	0.03	0.06	0.10	0.04
	(0.09)	(0.12)	(0.15)	(0.17)	(0.59)	(0.27)	(0.37)	(0.13)	(0.23)	(0.41)	(0.70)	(0.39)
Health	0.05	0.08	0.10	0.11	0.07	0.08	0.09	0.11	0.09	0.09	0.08	0.09
	(0.16)	(0.22)	(0.37)	(0.38)	(0.24)	(0.28)	(0.77)	(0.57)	(0.39)	(0.29)	(0.27)	(0.53)
Transportation Subtotal	1.10	1.27	1.44	1.59	1.83	1.41	2.22	1.65	1.87	1.65	1.62	1.83
	(1.13)	(1.27)	(1.52)	(1.69)	(2.28)	(1.59)	(13.0)	(2.74)	(3.47)	(3.15)	(2.23)	(7.04)
*Collective forms of transport	0.24	0.16	0.13	0.17	0.13	0.17	0.33	0.18	0.13	0.15	0.14	0.20
	(0.56)	(0.40)	(0.31)	(0.40)	(0.31)	(0.42)	(2.61)	(0.42)	(0.35)	(0.34)	(0.33)	(1.35)
*Flights	0.01	0.06	0.03	0.08	0.27	0.08	0.12	0.08	0.26	0.19	0.15	0.16
	(0.19)	(0.66)	(0.56)	(0.78)	(1.66)	(0.85)	(5.10)	(0.94)	(2.81)	(2.57)	(1.34)	(3.13)
*Private Transport	0.85	1.04	1.29	1.34	1.43	1.16	1.77	1.39	1.48	1.31	1.32	1.48
	(1.03)	(1.08)	(1.40)	(1.44)	(1.61)	(1.32)	(11.59)	(2.57)	(2.0)	(1.68)	(1.69)	(6.11)
School Transport	0	0	0	0	0	0	0	0	0	0	0	0
Fuel for transport	2.76	2.89	2.97	2.59	2.12	2.69	4.02	2.88	2.82	2.91	2.28	3.07
	(3.46)	(2.79)	(2.62)	(2.36)	(1.93)	(2.77)	(39.19)	(2.82)	(2.56)	(2.52)	(2.09)	(19.89)
Communication	0.52	0.47	0.37	0.32	0.23	0.40	0.94	0.44	0.36	0.31	0.25	0.50
	(0.44)	(0.40)	(0.32)	(0.31)	(0.23)	(0.37)	(7.57)	(0.38)	(0.32)	(0.31)	(0.24)	(3.83)
Recreation	0.99	1.28	1.43	1.60	1.55	1.34	2.0	1.79	1.63	1.56	1.41	1.71
	(0.86)	(1.14)	(1.26)	(1.52)	(1.68)	(1.30)	(10.79)	(2.65)	(2.31)	(2.17)	(1.81)	(5.79)
Education	0	0	0	0	0	0	0	0	0	0	0	0
Personal care subtotal	0.32	0.32	0.32	0.32	0.25	0.31	0.61	0.35	0.32	0.29	0.24	0.38
	(0.33)	(0.31)	(0.34)	(0.35)	(0.31)	(0.33)	(1.71)	(0.37)	(0.37)	(0.34)	(0.33)	(0.93)
*Necessities	0.12	0.11	0.11	0.09	0.06	0.10	0.20	0.12	0.10	0.09	0.06	0.12
	(0.12)	(0.10)	(0.10)	(0.10)	(0.10)	(0.11)	(1.06)	(0.12)	(0.10)	(0.09)	(0.09)	(0.54)
*Baby products	0.07	0.04	0.02	0.02	0.01	0.03	0.10	0.03	0.03	0.02	0.01	0.04
	(0.15)	(0.10)	(0.07)	(0.10)	(0.06)	(0.11)	(0.27)	(0.08)	(0.07)	(0.11)	(0.07)	(0.16)
*Other	0.13	0.17	0.19	0.20	0.17	0.17	0.31	0.20	0.20	0.19	0.17	0.22
	(0.25)	(0.26)	(0.30)	(0.30)	(0.26)	(0.27)	(1.13)	(0.31)	(0.32)	(0.28)	(0.29)	(0.63)
Gambling	0.07	0.09	0.08	0.05	0.03	0.07	0.10	0.07	0.09	0.06	0.03	0.07
	(0.16)	(0.18)	(0.17)	(0.16)	(0.09)	(0.16)	(0.31)	(0.17)	(0.24)	(0.13)	(0.07)	(0.22)

Miscellaneous	0.15	0.22	0.19	0.26	0.29	0.21	0.28	0.32	0.25	0.23	0.25	0.27
	(0.37)	(0.56)	(0.44)	(0.59)	(0.77)	(0.55)	(0.80)	(1.43)	(0.65)	(0.58)	(0.75)	(0.91)
TOTAL	10.73	11.99	11.97	11.74	11.22	11.50	20.51	13.32	13.02	12.46	10.77	14.54
	(4.77)	(4.51)	(4.09)	(4.02)	(3.92)	(4.35)	(108.68)	(8.59)	(7.51)	(9.30)	(6.38)	(55.37)
Number of Households	1119	1276	1353	1430	1605	6784	1069	1298	1326	1425	1660	6784

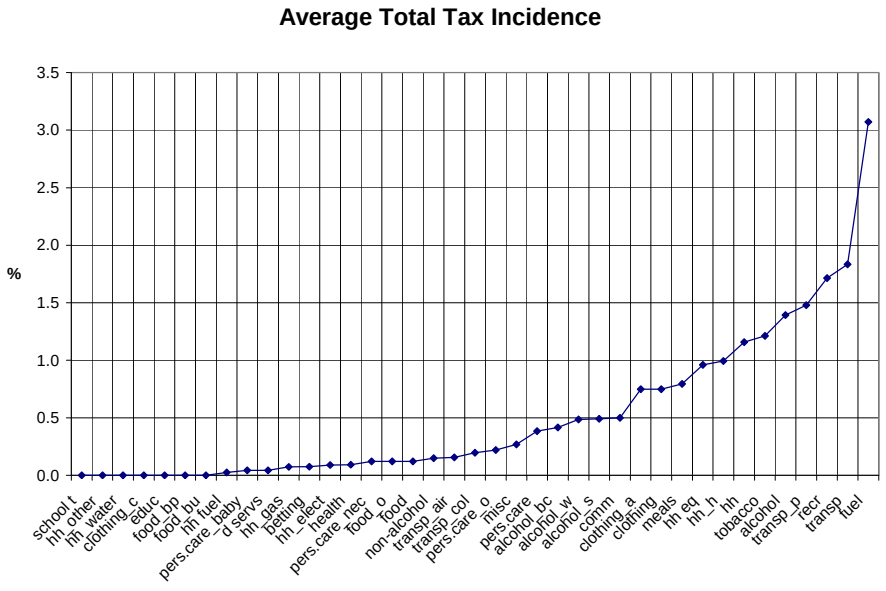
Table 14. Effects of Changes in Indirect Tax Rates on Tax Incidence by Employment Status and Expenditure Quintile (percent)

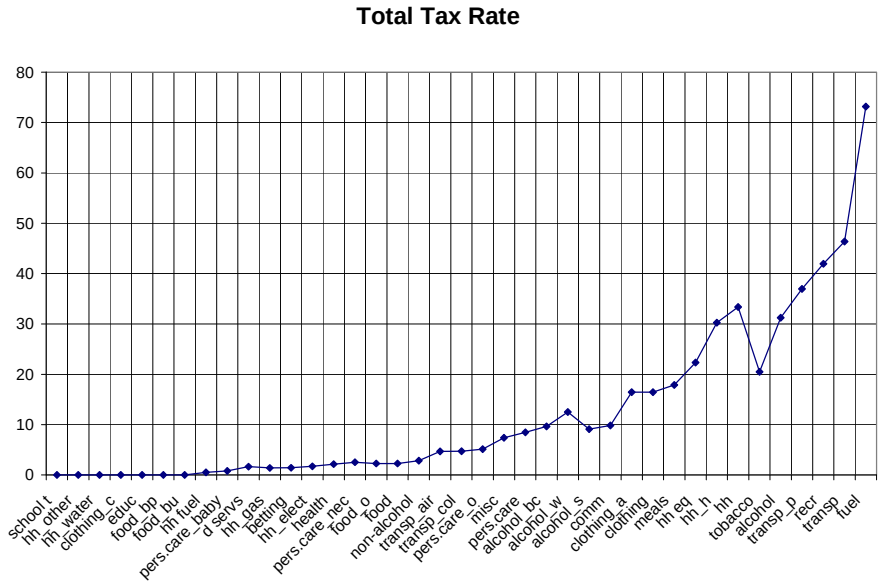
	Average Tax Incidence	Percentage Change from the base scenario (%)			
	Base scenario	Increasing fuel tax	Updating VAT rate to 15%	Standard-rating basic food	Standard-rating all food
All					
Quintile 1	10.732	1.916	-7.209	17.056	20.395
Quintile 2	11.993	1.743	-7.537	11.682	14.110
Quintile 3	11.960	1.756	-7.973	9.542	11.691
Quintile 4	11.743	1.602	-8.339	7.967	9.826
Quintile 5	11.215	1.403	-8.934	5.595	6.860
Total	11.502	1.706	-7.920	10.838	13.130
Male breadwinner					
Quintile 1	10.397	2.154	-7.237	16.395	19.440
Quintile 2	11.863	1.880	-7.489	11.059	13.353
Quintile 3	11.233	1.784	-8.116	10.356	12.798
Quintile 4	11.383	1.621	-8.109	8.345	10.079
Quintile 5	10.339	1.254	-8.734	6.313	7.608
Total	10.992	1.788	-7.841	11.115	13.372
Female breadwinner					
Quintile 1	10.413	1.863	-7.505	16.057	19.601
Quintile 2	11.214	1.744	-7.745	12.567	15.624
Quintile 3	11.414	1.596	-8.043	9.472	11.721
Quintile 4	12.093	1.620	-8.207	7.713	9.508
Quintile 5	11.229	1.333	-8.960	5.474	6.650
Total	11.204	1.662	-8.001	10.880	13.395
Dual earner					
Quintile 1	11.907	2.476	-7.156	14.345	17.250
Quintile 2	12.522	1.928	-7.436	10.319	12.532
Quintile 3	12.314	1.874	-7.849	8.589	10.645

Quintile 4	11.587	1.664	-8.360	7.572	9.433
Quintile 5	11.241	1.535	-8.903	5.302	6.619
Total	11.906	1.847	-8.002	8.790	10.795
None employed					
Quintile 1	11.553	1.630	-6.978	18.175	21.368
Quintile 2	12.479	1.439	-7.675	13.371	15.816
Quintile 3	12.934	1.563	-8.237	11.092	13.060
Quintile 4	13.329	1.389	-8.668	8.743	10.692
Quintile 5	12.756	1.069	-9.419	5.987	6.980
Total	12.275	1.494	-7.752	13.729	16.211
Overall Annual Tax Receipts (GBP)	71,287,560	72,365,056	64,960,380	77,111,944	78,375,728
Percentage change in revenues from policy (%)		1.51	-8.88	8.17	9.94

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

Figure 3: Tax Incidence for specific commodities: Overall results





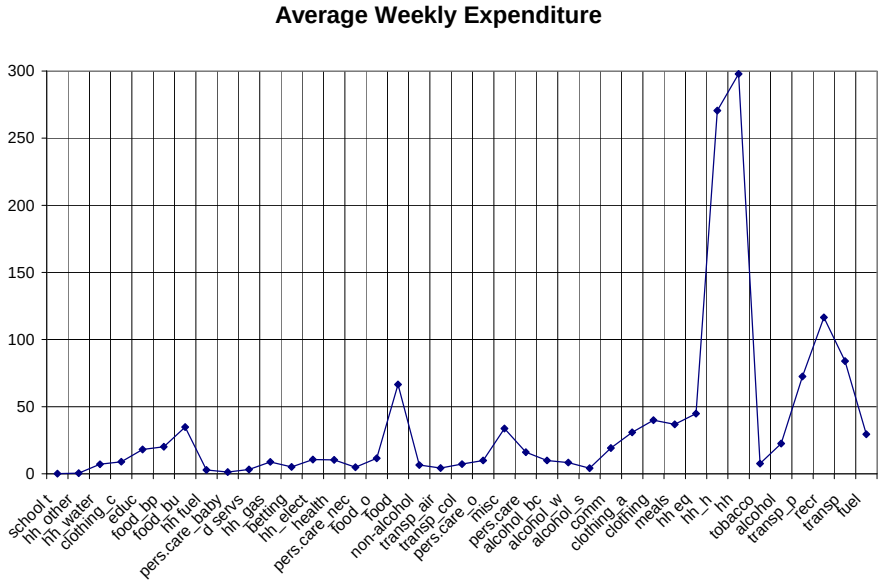
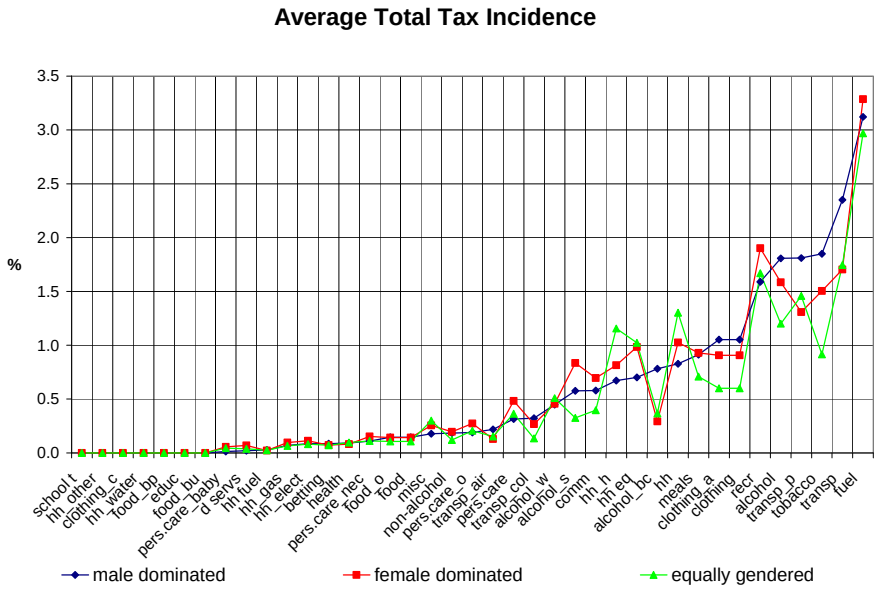
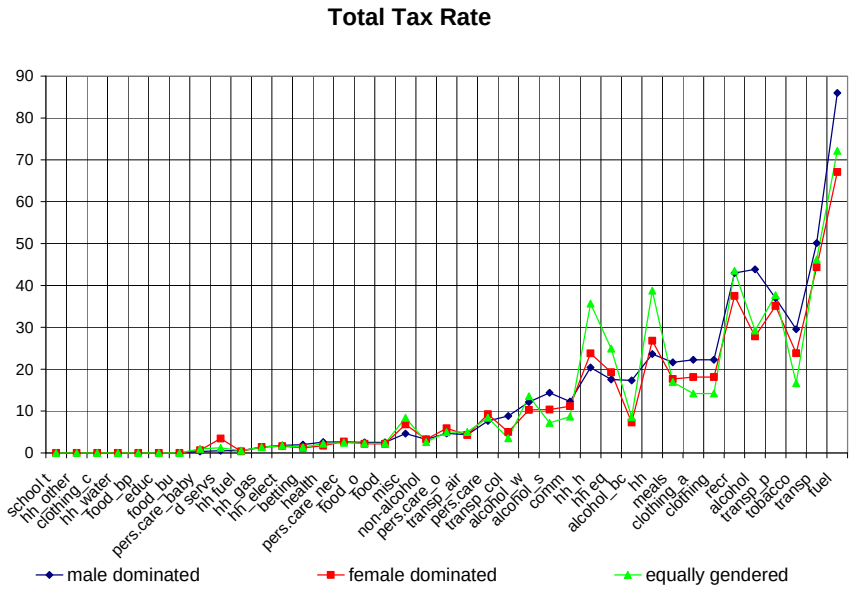


Figure 4: Tax Incidence for specific commodities: by sex composition





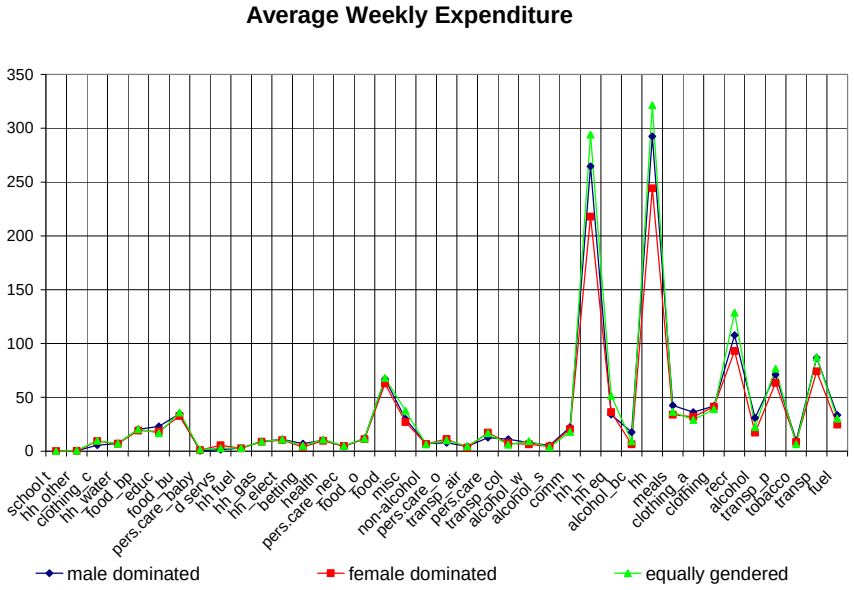
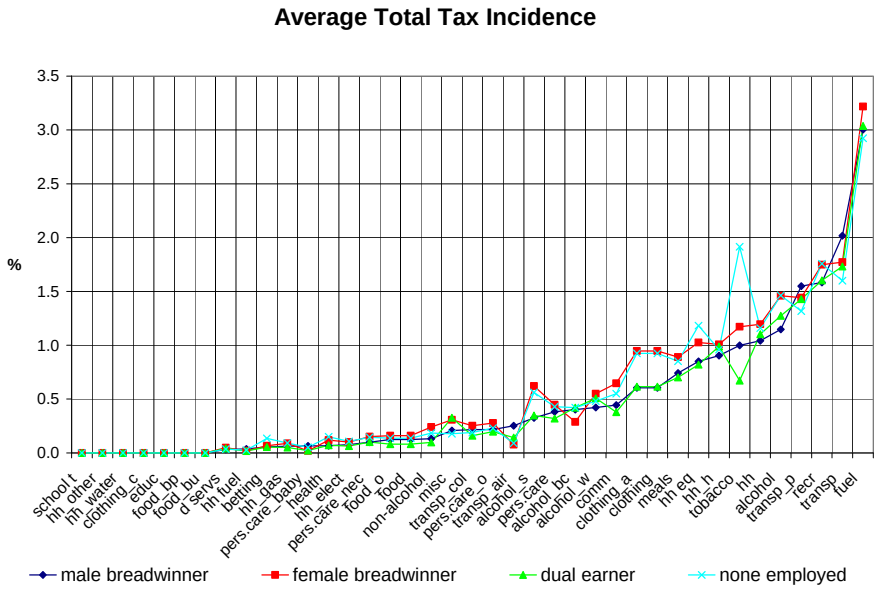
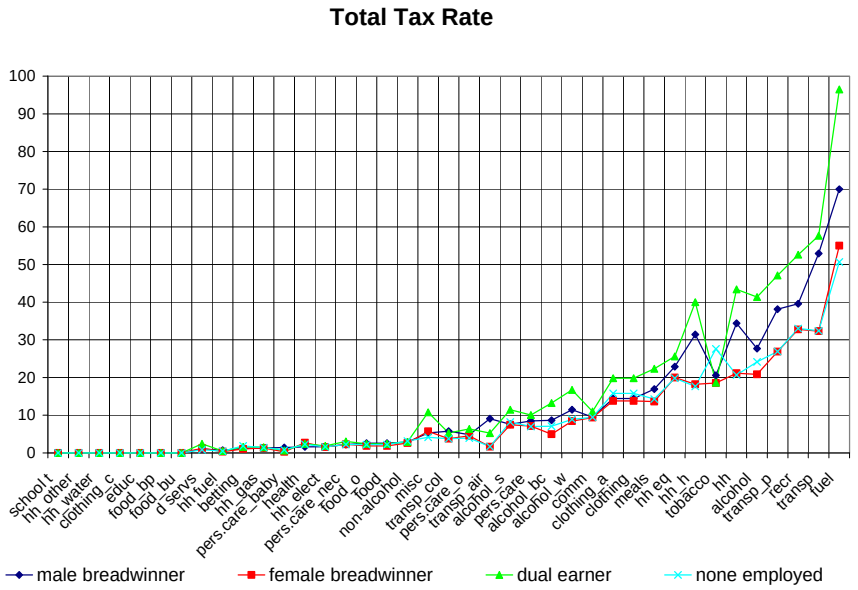
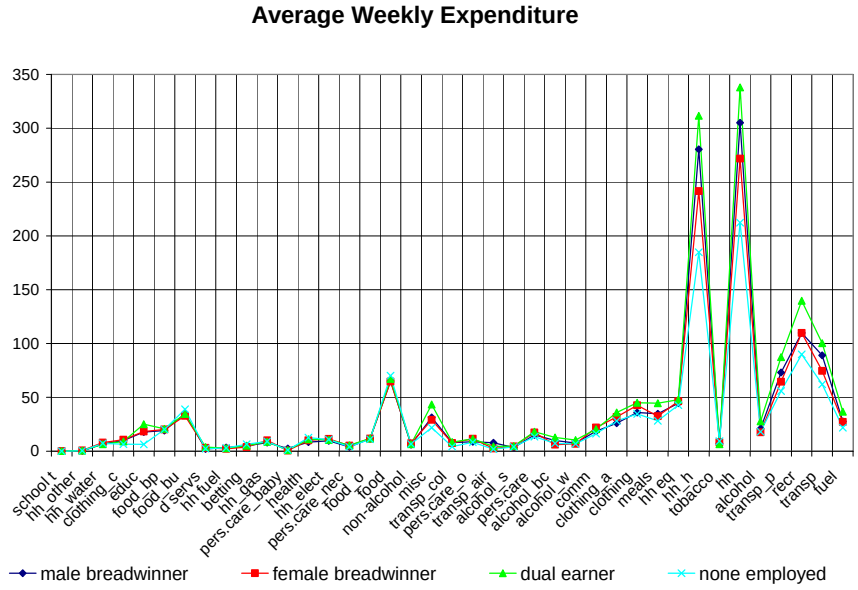


Figure 5: Tax Incidence for specific commodities: by employment status







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