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WHAT DRIVES SUPPORT FOR HIGHER PUBLIC SPENDING?

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What drives support for higher public spending?*

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Executive Summary

This paper examines the role of individual and household characteristics in explaining patterns of support for higher public spending on seven of the most important public spending programmes including health, education, the police and defence. Different groups in the population, such as the elderly, those who are highly educated, and those who support particular political parties, tend to support distinctive types of spending. There is some evidence that use of private alternatives to public services reduces support for higher state spending in the fields of health care and transport, although no evidence is found that this is true for education.

There is a fair degree of consonance between the factors affecting support for higher spending which individuals perceive as being in their own interest and that which they support as being in the interests of the country as a whole. Those differences that are found appear readily explicable. The association between having children in the household and supporting higher spending on education, for instance, is far stronger in the case of private interests than for the country as a whole. Personal use of private sector alternatives also appears to have less impact on perceptions of the national interest in expanded public provision than on perceptions of self interest.

There is some evidence that individuals tend to express a greater degree of support for those benefits for which they might or do qualify themselves. Some groups, such as better-off households and Conservative supporters, are clearly more hostile than others to spending on social security spending generally.

1. Introduction

Year after year, evidence from the annual British Social Attitudes (BSA) survey and elsewhere consistently shows both high levels of public support for increased spending on such front line public services as education and the National Health Service alongside a marked reluctance for individuals to countenance increases in their own tax bills. Using evidence from the 1995 BSA survey, we examine the popularity of seven major spending programmes (health, education, the police, defence, the environment, culture and the arts and public transport), linking any advocated changes in spending explicitly to the resultant changes in tax payments for the respondent's household.

We examine the effect of respondents' circumstances and opinions on each spending programme, taking account of many other influences on support for higher spending. In Brook, Hall and Preston (1996), we pointed out that some groups in the population, such as the elderly or those with children, are more likely than others to support increases in certain types of spending. However, not only might individuals who we group together as "the elderly" face widely varying household characteristics, these other characteristics may not be typical of the population as a whole. The elderly, for example, include rich and poor households but are on average less well-off than younger groups. Some elderly people have private health insurance but fewer than amongst other age groups. To separate out the effect of age on support for spending from the influences of these other factors requires the sort of analysis we conduct here, controlling for all other socio-economic, demographic and behavioural influences which are likely to affect attitudes towards public spending. We report also the results of a similar analysis to examine the individual characteristics associated with support for increased provision of social security benefits.

In the next section, we describe the British Social Attitudes Survey data set and our approach to question design in the 1995 survey. Section 3 describes our methodology. Section 4 presents our findings on which individual characteristics are associated with support for higher spending on a range of seven government programmes and on five types of social security benefits. Section 5 concludes.

2. Data and Question Design

British Social Attitudes is an annual survey of around 3500 respondents aiming to yield a representative sample of British adults. Since the first survey in 1983, the series has included questions about attitudes to a variety of public spending programmes, some questions designed to establish priorities for extra spending and others designed to establish willingness to pay for increases, or accept decreases, in spending. Questions of the latter type have focused on six items of publicly supported service provision (health, education, police, defence, culture and the arts, and the environment) and two items of publicly funded cash transfers (state pensions and unemployment benefit).

Our aim in revising these questions for the 1995 survey was both to put the tax implications of extra (or reduced) state spending into much sharper focus and to investigate some additional areas of interest such as support for spending on public transport and social security benefits for single parents, the disabled and parents working on low incomes.

Self-interest versus national interest

In previous years, BSA surveys have asked respondents what they would "like to see" happen to each of a range of government spending programmes. This did not spell out clearly the considerations to be taken into account when responding. Both individuals' private interests and their perceptions of the national interest are likely to influence what they might "like to see" happen. Since individuals may weigh the importance of the two considerations differently, and these may differ in interesting ways, we have separated out these two influences on attitudes towards public spending.

There are several reasons for our interest in examining support for changes in public spending out of self-interest separately from support resulting from perceptions of the common good. For instance, assessing the distribution of actual benefits from public spending requires knowledge of how individual interests (narrowly interpreted) vary. For predictions of voting and other sorts of political behaviour, on the other hand, answers based on wider considerations may be pertinent[1]. The extent to which electoral support is based on self-interest is itself an important question since it may well determine the political sustainability of public spending programmes in a changing environment. We therefore asked all respondents two sets of questions: first, would higher or lower spending on each programme be "best for the country as a whole" and second, which would be "best for you and your household."

For most spending programmes, a broadly similar proportion of respondents thought higher spending was both in their own interest and in the interest of the country as a whole. However, in respect of both education and health, a larger proportion of respondents thought higher spending would be good for the country than thought it would be good for themselves and their households[2].

Making the size and incidence of tax changes explicit

We sought to clarify the tax implications to respondents of choosing higher or lower spending on each programme. Questions asked in previous years had hinted that choosing "much higher spending" might lead to tax rises - but it was not clear what the size of these tax changes would be, or who would be asked to pay for them. Moreover, those who chose lower spending were not reminded that this might lead to lower taxes.

Unsurprisingly perhaps, there is some evidence to suggest that some respondents were allowing themselves to imagine that adverse tax consequences might be borne by others. Thus, in 1994, for example, 87 per cent of respondents supported increases in health spending, and 73 per cent supported higher spending on education, even if taxes might have

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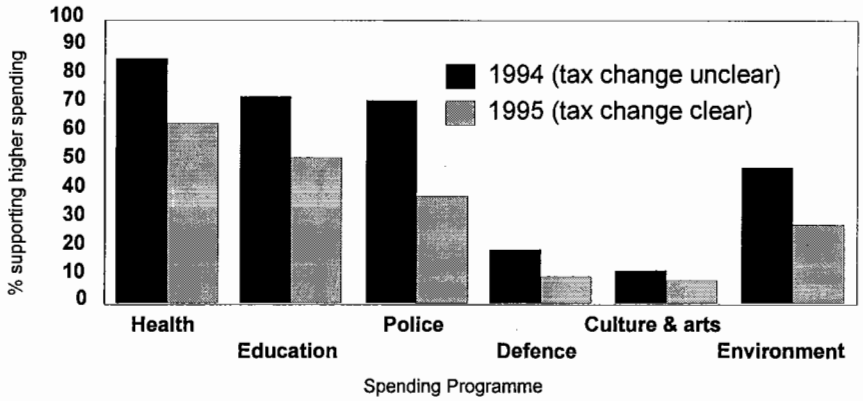
[1] Of course, what respondents would "like to see" or what they would vote for might be motivated by perceptions of neither personal nor national interest. Individuals may vote on perceptions of interests intermediate between that of self or country (such as those of a particular class or gender) or wider than both (such as, say, humanity as a whole) or crosscutting (such as those of the workers of the world or of women generally). For that matter, their votes may not be driven by anyone's interests (if, say, driven by the tenets of a particular religion or moral code not evaluating actions by consequences at all). It could even be argued that the concept of collective interests may not be well defined or coherent (though there is no evidence that respondents to this particular survey had difficulties coping with the concept).

[2] We also ask a series of questions on support for changing the level of public spending on five social security programmes, using the original BSA form of questioning. We did not make a similar distinction between household and national interest for questions on welfare spending. Although the distinction between household and national interests is obviously still there, the valuation of private benefits is less problematic and probably better addressed through means other than attitude surveys, such as tax benefit modelling using income and expenditure surveys.

to rise. But, in the same year, only 6 per cent of those who said they were middle income and 3 per cent of those who claimed to be on low incomes felt that their own taxes were too low. This suggests that many respondents were hoping that any higher spending that they endorsed would be paid for through somebody else's taxes.

Figure 1 : Impact of specifying the size and incidence of tax changes on percentage of respondents supporting higher spending



Source : Brook, Hall and Preston (1996)

We explicitly linked increases or reductions in public spending to specified changes in household tax bills in the form of either a change in the basic rate of income tax by a penny in the pound up or down, or a flat rate £35 charge or rebate per adult living in the household The impact on the numbers supporting higher spending for the six spending programmes which were asked about in both years is illustrated in figure 1. Support for higher spending fell in every single one of the six spending programmes which were asked about in both 1994 and 1995, in one case (police) by almost a half. However, a majority of respondents still supported higher spending on the core services of the Welfare State, health and education, even if their own tax bills would rise as a result.

Does the tax instrument make a difference ?

We can think of at least two reasons why support for higher public spending may vary according to household income. First, richer individuals may expect to receive a different share of the benefits of additional spending than poorer individuals. They may, for instance, use different types of public services to those used by the poor. Second, if respondents believe that spending changes are to be financed through changes to income related taxes, then richer individuals may expect the highest burden of any tax changes to fall on their tax bills. Thus, any variation in the support for higher spending between different income groups may be attributed to some combination of two effects - an "income effect" (the impact of higher incomes on support for spending due to either the expected pattern of benefits or simply because higher incomes make a given tax rise more affordable) and a "price effect" (the impact of shouldering a larger share of the additional tax burden on support for spending). Separating out these effects may be important but is difficult without making

explicit which tax instrument is to be used and doing so in a way which allows the tax price to vary in a way not perfectly correlated with income[3].

Whenever politicians worry about losing the support of the well-off for a spending change if they use progressive taxes to finance the additional public spending, they are worrying specifically about the strength of tax price effects. Separating out the income and tax price effects is also essential if we are to understand how increasing affluence may affect support for higher public spending. To investigate this, the respondents to the 1995 BSA were divided randomly into two equally sized groups. We asked one group about their attitudes to spending changes financed by raising or lowering the basic rate of income tax by one penny in the pound and the other half about their attitudes to spending changes financed by a flat £35 per head increase or decrease in the tax payments of all adults. This meant that two individuals with similar household incomes but who faced different tax instruments would face different increases in household tax bills as a result of choosing higher public spending. This variation in tax prices independent of variations in income should allow the separate identification, in principle, of income and tax price effects[4]. In other words, if tax price effects are strong, we might expect richer households to be noticeably less inclined to see higher spending as in their own interest if offered spending increases financed through a more progressive tax instrument[5].

3. Methodology

Individuals will support increases in public spending only if their willingness to pay for higher spending exceeds the tax cost that they would face. Willingness to pay is likely to depend on the household's income, since this influences its ability to pay, and on any household characteristics which affect the benefits which the respondent might expect to receive from higher spending on each spending programme. The cost, in terms of a higher household tax bill, depends on whether the respondent was faced with a flat rate tax change or with a change in the basic rate of income tax. For individuals asked to consider a tax change of £35 per adult in the household, this is proportional to the number of adults in the household; for individuals asked to consider a change to the basic rate of income tax the tax cost will, of course, be an increasing function of gross household income.

We estimated a separate ordered probit equation for each of the seven spending programmes using maximum likelihood techniques[6]. We investigated the influence which a range of individual and household characteristics might have on support for changes to public spending[7]. Variations in support for changes in a particular public spending programme between individuals were explained in terms of variations in the household income, level of education, economic activity and other characteristics of the respondents. The BSA surveys measure household incomes only in a banded form (i.e. we know only within which range

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[3] Previous questions in the BSA series have asked respondents which tax instrument they would prefer to be used to pay for higher public spending, but most respondents typically choose the one (an increase in the higher rate of income tax) through which they would not pay themselves.

[4] Of course, this works only if respondents understand the implied incidence of tax changes specified. We prefaced the spending questions by a question exploring understanding of the cost to the household of changing the basic rate of income tax by one penny in the pound. Brook, Hall and Preston (1996) present evidence that the implications of the different tax instruments were understood reasonably well.

[5] We did not use this randomisation over tax instruments in the case of welfare spending.

[6] In an ordered probit specification the probability of supporting more or of not supporting less spending are each regarded as a function of the same linear combination of the explanatory variables. To be specific, for an ordered probit equation this function is the cumulative distribution function of a normal distribution.

[7] The Appendix outlines a fairly simple economic model of responses to the BSA questions on public spending justifying the econometric techniques adopted.

each household's income lies). We chose to fit a lognormal distribution to this banded data, using the known endpoints for the bands[8], and using the predicted values as regressors.

We also included a variable to pick out those respondents who were confronted with the income related tax instrument. We then interacted this variable with household income and the number of adults living in the household in order to pick up variations in the "tax price" of higher spending between respondents. Economic theory suggests that individuals who would pay more under each tax regime should be less willing to support higher spending, just as a higher price for a particular good might deter an individual from purchasing the good. Individuals with high incomes, for instance, should have been less likely to support increases if faced with an income-related tax burden. Thus, we might expect that the interaction of household income with the dummy variable for those who were faced with the income tax question would enter negatively into the regression equation.

We are also interested in investigating the impact of use of private sector alternatives on support for public spending increases. To this end, we include variables reflecting purchase of private medical insurance, private schooling for children or car ownership as additional regressors in the analysis. Other behavioural and "value driven" variables include newspaper readership and support for particular political parties.

We report results with and without the inclusion of these additional variables separately for a number of reasons. Firstly, support for particular political parties, for instance, might be regarded as primarily playing a role in mediating the influence of socio-economic characteristics on support for public spending rather than having an independent effect. If this is so then it may be of interest to see the total effect from socio-economic characteristics including those operating through political affiliation in this way.

Secondly, the use of private alternatives to state services or identification with particular political parties may be associated with support for particular spending programmes primarily through the influence of common attitudinal factors, such as general antipathy to the public sector. This could mean that the coefficient estimates in equations which include these individual characteristics as explanatory variables could give a misleading impression if taken as evidence of the causal impact that these factors might have on support for higher spending. Thus, for example, any association between having private medical insurance and a reduced level of support for higher health spending may not represent any causal effect, but simply the fact that those who have purchased private insurance were less inclined to support higher state spending on health in the first place.

On the other hand, leaving these variables out of the equation would render estimates of included effects inconsistent if there *were* a causal impact and the causal influences we were omitting were correlated with included variables. We therefore present results excluding and including these variables, with the caveat that either approach will yield consistent estimates of the effects of interest only under strong assumptions, for instance, about the influences which affect choices over the use of private health insurance or educating one's children in the private sector. Reassuringly, conclusions about effects of other variables are not very sensitive to the inclusion of these variables.

We applied similar models to examine two further sets of issues :

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[8] The ranges of incomes covered by the bands are unequal.

- Which characteristics appear to influence the likelihood that an individual will support higher spending on a particular spending programme as being in the interest of the "country as a whole"?
- Which individual characteristics are associated with support for changes in spending on five classes of social security benefits ?

In the latter case, we include a set of explanatory variables which reflect the likelihood that the respondent would qualify for each of the social security benefits that we asked about. These include whether the individual is retired or disabled.

4. Results

4.1 Household interests

Table 1 presents the results of seven ordered probit estimates[9], each of which attempts to explain variations in support for changes in spending on one of the seven public spending programmes which respondents perceived as being in their own interest[10]. We organise the discussion of the results according to four groups of individual and household characteristics which we use to explain variations in attitudes to changes in public spending. These are household composition, socio-economic variables, use of private sector alternatives, and other influences such as newspaper readership.

Household composition influences

The age of the respondent appears to be positively associated with support for higher spending on all seven programmes, but significantly so only for police, defence and public transport. Higher support for spending on the police seems to fit with other evidence from the BSA survey revealing greater concern about crime in older age groups. Higher support for improvements to public transport may reflect the greater reliance of older individuals on the public transport network. Support for higher spending differs little between male and female respondents. The only programme towards which the attitudes of women seem significantly different to those of men is defence. Perhaps surprisingly, it is women who express greater support for spending on defence. Unsurprisingly, the number of children in the household was associated with a substantially greater enthusiasm for increased education spending. The explanation for increased support for spending on the police amongst those respondents whose households contained a larger number of adults is less obvious. Other than this, there is little evidence that household size has much impact on support for higher public spending.

Socio-economic influences

The impact of household income on support for higher spending is insignificant for all seven of the spending programmes[11]. We have included variables intended to capture income-related variation in tax prices so it seems unlikely that this is arising simply because the

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9 Under an ordered probit specification the conditional probability of supporting more spending, or of not supporting less, is a function of the same linear combination of the explanatory variables. For continuous variables the reported coefficients are expressed as marginal effects on the probability of supporting an increase in spending at the mean values of the explanatory variables. For these variables, the marginal effects on the probability of not supporting a reduction in spending are proportional to those reported. For dichotomous discrete explanatory variables the coefficients are expressed as the effect of changing from a value of zero to a value of unity for mean values of all other variables.

10 We do not report the estimated threshold values which are incidental to our interpretation.

11 This perhaps helps understand the lack of any clear impact from household size, which might have been expected to matter through its effect on household living standards (more people sharing the same household income) if through nothing else.

"income effect" and "price effect" on support for higher spending are cancelling each other out. However, there is little evidence of any effect from these variables either[12]. The tax instrument dummy and associated interactions are neither individually nor jointly significant[13] in any of the seven spending regressions, except in the police spending equation. Moreover, the signs of the interaction effects in the police spending equation are in conflict with any interpretation in terms of tax price effects.

We could interpret this as evidence that economic influences on support for public spending increases are indeed slight. If so, this would have profound implications - above all, public support for spending increases would be insensitive to the distribution of the implied tax burden. Support for spending changes among the better-off would not be jeopardised by finance through progressive tax instruments. However, other factors may be at play here. Respondents are answering questions about hypothetical situations without prior deliberation and as part of a lengthy questionnaire. They may have decided opinions about which aspects of public spending deserve more funds but little idea about the size of extra finance needed to secure the sort of improvements they want. Our interpretation is based on an underlying assumption that each individual would be prepared to countenance some maximum increase in their tax burden in order to receive the benefits from higher spending and that they would reject tax rises greater than this. However, any figure suggested in the wording of the question could plausibly have established itself in the respondent's mind as a reasonable benchmark for what it might cost to make a significant difference to the level of provision offered, severely attenuating the impact of the sort of economic influences we are trying to uncover. These sorts of "anchoring" effects are discussed, for instance, by Tversky and Kahneman (1974) and Green, Jacowitz, Kahneman and McFadden (1995).

Current household income can clearly only be an imperfect indicator of the household's expected long term living standards, especially for those with highly unstable incomes like the self-employed. Moreover, individuals who have only recently entered the job market or who are undergoing a period of training or study, might reasonably expect to have higher incomes in the future. We therefore take account of various characteristics of individuals, such as the level of formal education they have received, and characteristics of their jobs, such as whether or not they work in a manual occupation.

Any impact of the level of an individual's formal education on support for public spending can be interpreted in a number of ways. Increased formal education may be associated with changes in underlying values or it could reflect the likelihood of higher lifetime earnings. It is interesting to note that education, whether beyond age 16 or beyond age 18, is associated with increased support for higher spending on all spending programmes other than defence. Experience of post-compulsory education is associated with an increased interest in spending on the "quality of life" items - culture and the arts, the environment and public transport. Those who have undertaken post-compulsory education themselves are also more likely to see an interest in expanded public education spending.

One might expect that support for higher public spending will vary between different regions of the country, even allowing for variations in incomes and other household characteristics. This could be because of regional variation in tastes or attitudes or it could be because of regional variation in either existing levels of spending or in the anticipated location of any additional spending. To examine this, we include two regional effects - a dummy variable for respondents living in London and the South of England and another for those who live in

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[12] Brook, Hall and Preston (1996) present a simple cross tabulation suggesting that there are no strong effects from *perceived* tax cost either.

[13] Likelihood ratio tests of joint significance are reported below the table.

Scotland or Wales. Living in the South is associated significantly with support for spending on culture and public transport. This is presumably because of the concentration of both cultural institutions and commuters in the South, especially in London. The Scots and Welsh respondents differ mainly in being less supportive of extra spending on the police.

Use of private sector alternatives

One might expect that individuals who purchase private alternatives to public services might express different levels of support for increased spending on these services within the state sector. Such individuals might still make use of the state sector - individuals with private health insurance still rely on the NHS for accident and emergency provision, for example – so support need not be completely undermined. However, one might nonetheless expect lower support for spending increases unless the individual were a reluctant and marginal user of private alternatives who might be tempted back into the public sector by the increase. Some individuals might prefer to relinquish their use of private services if the quality of provision within the state sector was sufficiently improved.

Table 2 shows the difference which purchase of private medical insurance, private schooling for one's children or ownership of a car makes to support for higher public spending on each of the seven programmes. It is clear that having private health insurance is associated with a significantly lower probability of supporting increases in public health spending. It has previously been noted that this is true of the group covered by private medical insurance, without taking account of their economic and demographic characteristics (see Besley, Hall and Preston 1996 or Calnan, Cant and Gabe 1993). Our results establish that this remains true even when we make allowance for other characteristics of those with and without private insurance such as the privately insured typically being richer and more prone to support the Conservative party than most. We should be careful, however, to recognise that purchasing such insurance could be influenced by attitudes toward the public sector. An alternative explanation for the correlation we are noting could be that the sorts of people who tend to buy private health insurance could be the sorts of people who are ill-disposed to the public sector, whether they buy private insurance or not[14].

We did not find any strong evidence of a link between the use of private schooling and support for higher public spending on education. We have noted elsewhere (Brook, Hall and Preston 1996), that, taken as a group, those with children in private education actually seem *more* interested in increased state spending than others, but this is clearly not statistically significant once we control for other characteristics.

Ownership of a private car can be seen as another way of opting out of the public sector. A privately owned car and public transport can be considered as alternative ways of making journeys. Taking all other characteristics into account, we observe that individuals who own a car are rather less inclined to support increased spending on the public transport system or the environment than those who do not.

Other influences

Even taking in to account the differing socio-economic and demographic characteristic associated with the supporters of particular political parties, it seems that political affiliation is linked with pronounced differences in support for changes to public spending. Conservative supporters are distinguished from others predominantly in being considerably less inclined to support extra spending on the NHS whereas Labour supporters, on the other

[14] This is the subject of future research.

hand, express high level of support for additional spending on education, culture, the environment and public transport.

We show in Table 2 that the readers of tabloid[15] newspapers are less well-disposed than others (whether readers of other newspapers or not) to spending on the "quality of life" items - education, culture, environment and public transport. This could arise from readership influencing attitudes or because choice of paper is influenced by pertinent attitudinal and cultural factors. Our estimates of the impact of other individual characteristics on support for public spending appear fairly robust to whether or not we include these attitudinal variables in our analysis.

Many of the characteristics which appeared to be associated with support for particular public spending programmes in the simple crosstabulations presented in Brook, Hall and Preston (1996) remain important once we have taken account of other influences on spending using the more sophisticated techniques used here. We now go on to apply these techniques to examine perceptions of national interest in public spending changes and support for higher spending on five types of social security benefit.

4.2 National Interest

As well as asking respondents whether they thought increases or reductions in public spending on each of the seven spending programmes would be in the interests of their own household, we also asked them which reforms would be for the good of the country as a whole. Figure 2 illustrates how the proportion who would support increases in spending on each of the seven programmes as being in the interests of their own household compares to the proportion who thought that higher spending would be in the interest of the country as whole. As can be seen, the levels of support were broadly similar, although rather larger proportions of the public thought that higher spending on health and education would be in the national interest than thought it would be in the interest of their own household. There is, of course, no inconsistency in this – it all depends on how individuals interpret the interests of "the country as a whole"[16].

Whilst proportions of the public supporting higher spending as being in their own interest and as being in the national interest are similar for most programmes, it does not necessarily follow that it is the same respondents who hold these views. We therefore attempt to explain support for higher spending on each programme as being in the national interest in terms of the same types of individual characteristics and attitudinal variables as we used to explain patterns of support for higher spending in the household's interest in Table 2. The results for support for higher spending in the national interest are reported in Table 3.

These results suggest that the factors associated with an individual supporting higher spending as being in the national interest are remarkably similar to those associated with higher spending being perceived as in the interest of the respondent's own household. It is difficult, having looked at these tables, not to believe that individuals own interests exert a considerable pull on what they also think to be good for the nation.

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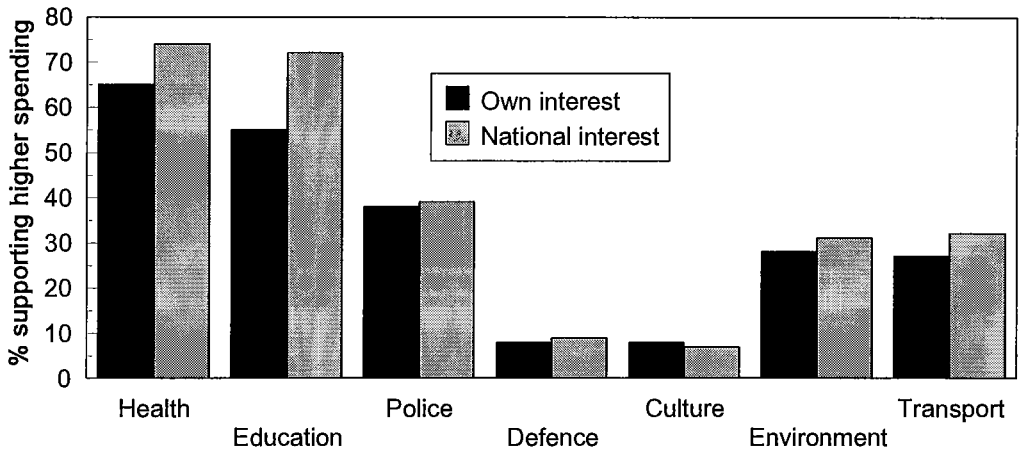
15 We have used a restricted definition of tabloid newspapers - the Mirror, Sun and Star.

16 If, for instance, respondents took the phrase to indicate the interests of the median respondent then it would be quite consistent for only just over half of the population to see an increase as in their own interest but for everyone to correctly acknowledge it to be in the national interest.

Figure 2 : Proportions who thought higher spending would be in the interest of their household and in the interests of the country as a whole



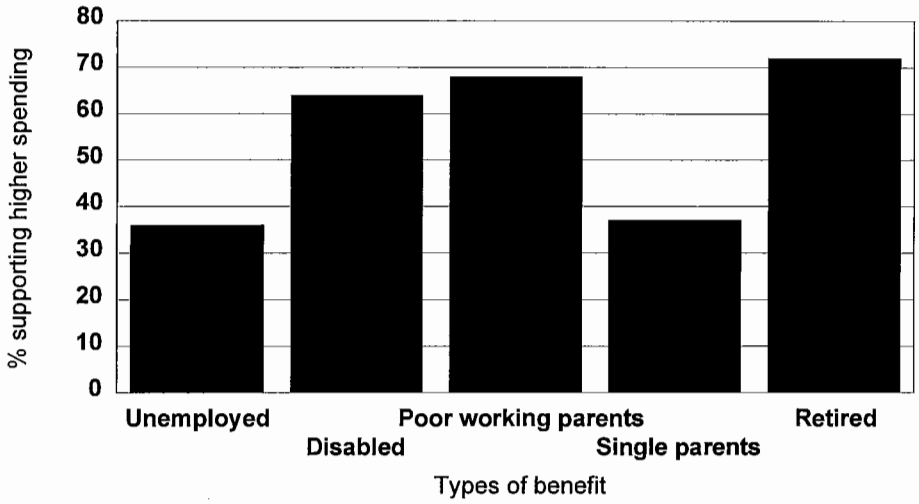
Source : Brook, Hall and Preston (1996).

Nonetheless there are some noteworthy differences. In particular, the presence of children in the household has far less impact on support for increased education spending when respondents are asked to consider whether or not increased spending is in the national interest. When respondents were asked to consider the national interest rather than the interests of their own household, car ownership was less associated with reduced support for spending on the environment and public transport, and private health insurance was less associated with reduced support for public spending on health. Indeed in all these cases the effects cease to be statistically significant. Whilst these differences are all readily explicable, some other differences are less easy to explain. Income, for instance, seems more important to perceptions of what is in the national interest and owner occupation less so.

4.4 Attitudes to Welfare Spending

The 1995 BSA survey asked individuals whether they would support higher or lower spending on five types of social security benefit - benefits for unemployed people, disabled people unable to work, working parents on low incomes, single parents and retired people. Whilst the exact size and incidence of any resulting tax changes was not made explicit, respondents were reminded that choosing higher or lower spending was likely to mean they would have to pay higher or lower taxes. Figure 3 shows the large variations in the extent of support for higher spending across the different types of benefits with 72 per cent of respondents supporting higher spending on pensions whilst only 37 per cent supported higher spending on benefits for single parents.

Figure 3 : Support for increases in social security benefits[17]



We estimate the impact of a range of individual and household characteristics on support for spending on each of these social security benefits, using ordered probit equations as before. In addition to the individual characteristics which were useful in explaining variations in support for higher spending on the seven major spending programmes, we added some characteristics of individuals which are associated with the likelihood of the respondent qualifying for each of the benefits. These are whether the respondents are themselves retired, disabled, a single parent or unemployed[18]. The results are shown in Table 4[19].

Unsurprisingly, our results suggest a clear tendency for individuals to be more sympathetic to spending on the sorts of benefits which they might receive themselves. The keenness of the unemployed to see more spent on benefits for the unemployed, of the disabled to see more spent on benefits for the disabled and of single parents to see more spent on benefits for single parents are pronounced and strongly significant. Furthermore, these do not typically translate into greater keenness to see more spent on benefits for other vulnerable or low income groups[20]. This pattern could simply reflect self-interest or it could be that respondents can empathise better with the straitened circumstances of those in similar positions to themselves than with vulnerable groups with different characteristics.

The retired do not seem any more inclined than anyone else to favour state help for retired households but what is clear is that age does have a strong positive impact. Other effects worth noting in this regard are the antipathy of higher income households to higher spending on benefits for the unemployed and the enthusiasm shown by households with children for benefits for working parents on low incomes and single parents. Those respondents living in Scotland and Wales appear more supportive of higher spending on benefits for unemployed people than those who live in England.

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17 Since the question format is different from that used for the seven major spending programmes above, these figures are not comparable with those of Figure 1.

18 We did investigate whether these variables might also influence attitudes to other spending programmes but could find no strong evidence to suggest that they should be included in the equations of earlier sections.

19 In this case respondents were given a wider range of options, including supporting "more" or "much more" spending.

20 There is some evidence to suggest that single parents want more help for the unemployed and the disabled want more help for poor working families.

The effects of political allegiance are strong. Those identifying with the Conservative Party are less inclined than others to favour increases in spending on any form of social security outlay. Labour identifiers, on the other hand, are more supportive of extra spending on all five benefits, and significantly so in the case of all but the retired.

4.5 Correlations in support for different spending programmes

Analysing support for changes in spending on each of the seven main programmes separately may well lead us to neglect important and interesting correlations between the support which exists for extra spending on them. In our individual regressions, we control for the impact that these recorded household composition, socio-economic and behavioural influences might have on support for higher public spending. However, there might also be a correlation between the omitted influences in each of the individual spending regressions -that is, between any influences on support for each spending programme which we cannot associate with observed characteristics. Indeed, instead of treating support for spending on health and education as being independently determined, it may well be possible to describe the pattern of support adequately in fewer dimensions. This could result from a particular structure in preferences for the two types of spending or because of some kind of structure in associated attitudinal influences. This is the subject of research in progress and we present some preliminary evidence here.

We estimate correlations in the unexplained variation in support for each of the seven spending programmes (i.e. the variations in support which are not explained by the individual characteristics for which we have information such as age and household income). Table 5 presents the estimated matrix of underlying (conditional) correlations between support for spending on the seven items. There are evidently some strong correlations deserving of comment. We concentrate our discussion on consideration of the eigenvectors of the correlation matrix, which we can see as indicating the most important directions of covariation in underlying attitudes. Those corresponding to the three largest eigenvalues are most interesting. The first eigenvector loads positively and in roughly equal magnitude on all seven items. This is suggestive of a dimension reflecting general support for higher public spending. The second eigenvector seems to be distinguishing the first three, and incidentally most popular, items - health, education and police - from the other four - defence, culture, environment and public transport. The third, on the other hand, seems to oppose support for spending on the police and defence to that on other items and particularly education, environment and public transport. What we can see here suggests that a large part of respondents' attitudes may be shaped by a distinction between three types of publicly provided goods: a first set of items broadly associated with "social welfare" such as health, education and public safety; a second set of goods associated with public order, comprising spending on police and defence; and a third set of goods associated with "quality of life" or "post-materialist" values, including education, culture, environment and public transport.

We repeated this type of analysis to examine support for the five different types of social security benefits. Table 6 summarises the conditional correlations in attitudes that we found. The eigenvectors associated with the largest two eigenvalues of the correlation matrix present an interesting picture. The first is, as with attitudes to the spending programmes considered above, indicative of general support for welfare spending. The second eigenvector, however, clearly distinguishes spending on unemployed and single parents from spending on disabled and retired people. There are a number of possible interpretations of this. It may simply reflect the probabilities which individuals attach to becoming themselves dependant on these types of benefits at some stage of their lives. Alternatively, it could reflect some form of value judgement as to which groups, amongst those that are poor, are

most deserving of assistance. Indeed, we find evidence of a degree of consonance between particular hostility to spending on benefits for the unemployed and single parents, as opposed to other benefit recipients, and agreement with statements which indicate suspicion about the honesty or merit of benefit recipients[21].

5. Conclusions

We have examined the role of individual and household characteristics in explaining patterns of support for higher public spending on seven of the most important public spending programmes including health, education, the police and defence. We found that some groups in the population, such as the elderly, those who are highly educated, and those who support particular political parties, tend to support distinctive types of spending, even when we control for a range of other factors which might affect their attitudes. We also found some evidence that use of private alternatives to public services reduced support for higher state spending in the fields of health care and transport, although we could not find any evidence that this was true for education.

We found a fair degree of consonance between the factors affecting support for higher spending which individuals perceive as being in their own interest and that which they support as being in the interests of the country as a whole. Those differences that were found appear readily explicable. The association between having children in the household and supporting higher spending on education, for instance, was far stronger in the case of private interests than for the country as a whole. Personal use of private sector alternatives also appeared to have less impact on perceptions of the national interest in expanded public provision than on perceptions of self interest.

We found some evidence that individuals tend to express a greater degree of support for those benefits which they might or do qualify for themselves. We also observe that some groups, such as better-off households and Conservative supporters, are more hostile than others to spending on social security spending generally. Hostility to certain benefits appears to be associated with suspicion about the honesty or merit of certain groups of benefit recipients.

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21 Agreement with such statements as "around here, most unemployed people could find a job if they really wanted one" and "most people on the dole are fiddling in one way or another" was linked with lower support for spending on these social security benefits in particular.

Appendix I Model and estimation

A model

We present here a simple economic model to guide choice of variables and estimation procedure. Let Q_i^j denote response to the question regarding the interests of the *i*th household in extra spending on the *j*th item, where a value of 1 denotes a positive response to higher spending, a value of -1 denotes a positive response to lower spending and a value of 0 denotes a preference for no change.

Let p_i denote the tax cost of the suggested extra spending to the household containing the *i*th respondent under the tax instrument specified[22]. For individuals asked to consider an equal change in all adults' tax payments this is proportional to the number of adults in the household; for individuals asked to consider a change to the basic rate of income tax the tax cost will be an increasing function of household gross income. Letting δ_i be a dummy variable taking the value 0 for respondents of the first type and 1 for households of the second type, suppose then that we can represent the tax cost by

$$\ln p_i = (1-\delta_i)\ln(\phi_0 n_i) + \delta_i \ln(\phi_1 y_i^{\rho})$$

where ϕ_0 and ϕ_1 are parameters determined by the size of tax changes suggested and ρ is a parameter included to reflect any nonlinearity in the relationship between household income and the tax cost in the case of those respondents who were confronted with a change in the basic rate of income tax.[23].

Suppose furthermore that the willingness to pay for the benefits accruing from extra spending on the *j*th good, q_i^j, can be represented by

$$\ln q_i^j = \alpha_0^j + \alpha_1^j \ln y_i + \alpha_2^j \ln n_i + \alpha_3^j \mathbf{Z}_i + \varepsilon_i^j$$

where $\mathbf{Z_i}$ denotes a vector of other relevant household characteristics and ε_i^j denotes a random disturbance. We assume a respondent favours increased spending if $\ln q_i^j - \ln p_i > \tau_1$, favours a cut in spending if $\ln q_i^j - \ln p_i < -\tau_{-1}$ and favours no change otherwise, where τ_1 and τ_{-1} are to be interpreted as marking thresholds of indifference. Thus

$$\Pr(Q_i^j = 1|y_i,n_i,\mathbf{Z}_i,\delta_i) = \Pr([\alpha_0^j - \ln\phi_0 - \tau_1] + [\ln\phi_0 - \ln\phi_1]\delta_i + [\alpha_1^j - \rho\delta_i]\ln y_i + [\alpha_2^j - 1 + \delta_i]\ln n_i + \alpha_3^j \mathbf{Z}_i > -\varepsilon_i^j)$$

$$\Pr(Q_i^j = -1|y_i,n_i,\mathbf{Z}_i,\delta_i) = \Pr([\alpha_0^j - \ln\phi_0 + \tau_{-1}] + [\ln\phi_0 - \ln\phi_1]\delta_i + [\alpha_1^j - \rho\delta_i]\ln y_i + [\alpha_2^j - 1 + \delta_i]\ln n_i + \alpha_3^j \mathbf{Z}_i < -\varepsilon_i^j)$$

$$\Pr(Q_i^j = 0|y_i,n_i,\mathbf{Z}_i,\delta_i) = 1 - \Pr(Q_i^j = 1|y_i,n_i,\mathbf{Z}_i,\delta_i) - \Pr(Q_i^j = -1|y_i,n_i,\mathbf{Z}_i,\delta_i)$$

Estimation

Assuming that the disturbances are distributed normally, we estimate the seven equations by maximum likelihood as independent ordered probit equations with regressors comprising the logarithm of household income, the logarithm of number of adults, other household characteristics, a dummy for the nature of the tax instrument and this dummy interacted with the income and number of adults variables. If the economic theory is correct then these

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22 We assume the tax gain from lower spending on each programme would be the same and the questions were worded and presented in such a way as to make this typically true.

23 If all income-earning household members were paying tax at the basic rate one would expect proportionality to be a reasonable approximation.

interactions should enter with nonpositive and nonnegative signs respectively. The economic theory implies cross-equation restrictions on these effects which we do not impose in estimation - doing so might enhance efficiency of the estimates but those presented here are still consistent.

On BSA surveys, income data are collected in banded form. We chose to fit a log normal distribution to these banded data, using the known endpoints for the bands, and using the predicted values as regressors. Strictly speaking the generated nature of the income regressor necessitates a correction to the standard errors on the probit coefficients - however, Preston and Ridge (1995) find that the correction makes little difference in a similar context and we follow them in ignoring it.

We then investigate the structure of the matrix of the correlation coefficients. We estimate the conditional polychoric coefficients by a series of pairwise bivariate maximum likelihood maximisations using the GAUSS program MECOSA (see Browne and Arminger 1995, Schepers and Arminger 1992). Some idea of the success in representing the variation in a reduced dimensional space may be indicated by the rapidity of decline of the matrix's eigenvalues. The eigenvectors associated with the largest eigenvalues offer an indication of the most important dimensions of covariation. We may note in this respect the well known correspondence between the eigenvectors of a covariance matrix and the principal components of the variables concerned. The eigenvalues sum to the dimension of the original matrix and "the importance of the *j*th component in a more parsimonious description of the system (Morrison 1990)" is measured by the value of the eigenvalue as a proportion of that sum.

Appendix II Definition of variables

Age	Age of respondent in years (divided by 10)
Female	1 if respondent is female; 0 if male
Adults	Logarithm of number of adults in the household
Children	Proportion of household members under the age of 18
Household income	Predicted logarithm of gross household income
Manual worker	1 if manual worker; 0 otherwise
Self-employed	1 if self-employed; 0 otherwise
A Level education	1 if possesses A-level qualification; 0 otherwise
Higher Education	1 if possesses a degree or other higher qualification; 0 otherwise
Owner Occupier	1 if owner occupier; 0 otherwise
Car owner	1 if owner of car; 0 otherwise
Private health insurance	1 if covered by private health insurance; 0 otherwise
Privately educated	1 if any child educated at private school; 0 otherwise
Reads Tabloid	1 if regular reader of tabloid newspaper[24]; 0 otherwise
Conservative	1 if supporter of Conservative Party; 0 otherwise
Labour	1 if supporter of Labour Party; 0 otherwise
Lives in South	1 if resident in South of England; 0 otherwise
Scotland/Wales	1 if resident in Scotland or Wales; 0 otherwise
Asked income tax question (δ_i)	1 if asked to consider spending financed by extra penny in the pound on or off income tax; 0 if asked to consider spending financed by raising or lowering taxes for every adult by £35 per annum.
Retired	1 if retired; 0 otherwise
Single parent	1 if single adult with children aged under 18; 0 otherwise
Unemployed	1 if unemployed; 0 otherwise
Disabled	1 if disabled; 0 otherwise

[24] "Tabloid" newspaper refers here to the Sun, Daily Mirror and Star.

Appendix III Tables

Table 1: Household Interests: Ordered Probit Estimates[25]

	Health	Education	Police	Defence	Culture & arts	Environment	Public Transport
Age	0.017	0.009	0.056	0.019	0.006	0.010	0.022
.	(1.658)	(0.894)	(5.633)	(4.757)	(1.660)	(1.178)	(2.567)
Female	0.027	0.050	-0.002	0.040	0.021	0.006	0.000
.	(0.842)	(1.493)	(-0.077)	(3.084)	(1.743)	(0.245)	(0.006)
Adults	0.043	0.077	0.126	-0.008	-0.027	0.081	0.010
.	(0.792)	(1.297)	(2.082)	(-0.337)	(-1.213)	(1.526)	(0.193)
Children	0.111	0.537	0.094	0.030	-0.003	-0.015	-0.002
.	(1.563)	(7.613)	(1.413)	(1.045)	(-0.108)	(-0.265)	(-0.029)
Household income	-0.033	-0.009	-0.047	-0.008	0.007	-0.018	-0.035
.	(-1.109)	(-0.280)	(-1.479)	(-0.624)	(0.540)	(-0.669)	(-1.341)
Manual worker	0.014	0.042	0.002	0.015	-0.026	0.019	0.006
.	(0.427)	(1.233)	(0.063)	(1.082)	(-2.022)	(0.681)	(0.210)
Self-employed	0.063	-0.048	0.089	0.027	0.008	0.089	-0.069
	(0.985)	(-0.735)	(1.423)	(0.950)	(0.304)	(1.490)	(-1.527)
A Level education	0.074	0.136	0.074	0.004	0.072	0.190	0.147
.	(1.465)	(2.615)	(1.483)	(0.167)	(2.998)	(4.257)	(3.206)
Higher Education	0.037	0.071	0.032	-0.023	0.090	0.125	0.149
.	(0.958)	(1.732)	(0.803)	(-1.478)	(4.996)	(3.617)	(4.404)
Owner Occupier	0.056	-0.019	0.005	-0.039	-0.021	0.022	0.016
.	(1.606)	(-0.514)	(0.159)	(-2.590)	(-1.482)	(0.718)	(0.537)
Car owner	-0.022	-0.026	-0.019	0.017	-0.017	-0.066	-0.123
.	(-0.568)	(-0.647)	(-0.501)	(1.095)	(-1.111)	(-1.957)	(-3.467)
Lives in South	-0.003	-0.070	-0.039	-0.007	0.038	0.014	0.058
.	(-0.106)	(-2.111)	(-1.236)	(-0.561)	(2.969)	(0.531)	(2.152)
Scotland/Wales	0.014	-0.021	-0.099	-0.028	0.001	-0.054	-0.015
.	(0.325)	(-0.473)	(-2.399)	(-1.719)	(0.065)	(-1.561)	(-0.425)
Asked income tax question (δ_i)	-0.248	-0.249	-0.450	0.049	0.184	-0.067	-0.123
.	(-0.778)	(-0.757)	(-1.481)	(0.345)	(1.397)	(-0.242)	(-0.452)
$\delta_i \times$ Income	0.034	0.026	0.065	-0.008	-0.019	0.012	0.012
.	(0.934)	(0.694)	(1.778)	(-0.475)	(-1.380)	(0.385)	(0.406)
$\delta_i \times$ Adults	-0.022	-0.004	-0.162	0.053	0.003	-0.073	0.036
.	(-0.286)	(-0.044)	(-2.076)	(1.655)	(0.102)	(-1.046)	(0.543)
Log likelihoods							
	-793.58	-946.63	-937.66	-911.12	-884.55	-1011.73	-1049.59
Tests for exclusion of all tax instrument effects							
χ^2_3	4.46	0.69	7.88	2.78	2.36	1.36	1.04
P value	0.22	0.88	0.05	0.43	0.50	0.72	0.79

Ordered probit estimates: Asymptotic t-values in italics

[25] We have chosen to report coefficients expressed as marginal effects on the probability of supporting any increase in spending at the mean value of the explanatory variables. In the case of discrete variables, we report the impact on the probability of supporting increased spending which would result from moving from the zero state to the one state. (e.g. moving from not being an owner occupier to becoming an owner occupier).

Table 2: Household Interests: Ordered Probit Estimates

	Health	Education	Police	Defence	Culture & arts	Environment	Public Transport
Age	0.015	0.003	0.053	0.017	0.004	0.005	0.016
	(1.434)	(0.256)	(5.055)	(3.849)	(1.012)	(0.580)	(1.816)
Female	0.038	0.068	0.001	0.035	0.018	0.011	0.004
	(1.187)	(1.976)	(0.043)	(2.653)	(1.529)	(0.425)	(0.166)
Adults	0.030	0.092	0.118	-0.008	-0.029	0.086	0.012
	(0.539)	(1.493)	(1.902)	(-0.353)	(-1.346)	(1.602)	(0.238)
Children	0.060	0.512	0.074	0.017	-0.004	-0.024	-0.009
	(0.833)	(7.030)	(1.082)	(0.579)	(-0.168)	(-0.415)	(-0.164)
Household income	-0.011	-0.010	-0.037	-0.012	0.002	-0.024	-0.034
	(-0.353)	(-0.278)	(-1.136)	(-0.874)	(0.156)	(-0.857)	(-1.300)
Manual worker	-0.012	0.039	0.004	0.012	-0.020	0.025	0.013
	(-0.351)	(1.089)	(0.133)	(0.893)	(-1.538)	(0.892)	(0.455)
Self-employed	0.083	-0.013	0.107	0.027	0.003	0.091	-0.078
	(1.290)	(-0.185)	(1.642)	(0.961)	(0.103)	(1.450)	(-1.636)
A Level education	0.083	0.124	0.070	0.005	0.067	0.169	0.133
	(1.594)	(2.305)	(1.393)	(0.221)	(2.798)	(3.704)	(2.871)
Higher Education	0.010	0.037	0.024	-0.025	0.075	0.105	0.121
	(0.232)	(0.858)	(0.575)	(-1.547)	(4.140)	(2.944)	(3.480)
Owner Occupier	0.073	-0.020	0.014	-0.036	-0.022	0.021	0.014
	(2.067)	(-0.502)	(0.397)	(-2.352)	(-1.542)	(0.697)	(0.452)
Car owner	-0.000	-0.019	-0.028	0.015	-0.019	-0.073	-0.129
	(-0.008)	(-0.461)	(-0.719)	(0.925)	(-1.176)	(-2.085)	(-3.518)
Private health	-0.116	-0.039	-0.044	-0.003	0.005	0.016	-0.048
	(-2.422)	(-0.823)	(-1.027)	(-0.176)	(0.269)	(0.412)	(-1.376)
Private school	0.108	0.048	0.064	0.026	0.022	0.099	0.094
	(1.658)	(0.776)	(0.946)	(0.992)	(0.858)	(1.634)	(1.894)
Reads Tabloid	0.034	-0.088	0.007	0.007	-0.042	-0.066	-0.089
	(0.996)	(-2.446)	(0.214)	(0.521)	(-3.361)	(-2.433)	(-3.144)
Conservative	-0.147	-0.032	-0.015	0.026	-0.007	-0.051	-0.051
	(-3.127)	(-0.693)	(-0.317)	(1.318)	(-0.388)	(-1.278)	(-1.448)
Labour	0.056	0.158	0.011	-0.012	0.035	0.065	0.063
	(1.592)	(4.380)	(0.314)	(-0.802)	(2.354)	(2.086)	(2.044)
Lives in South	0.004	-0.068	-0.039	-0.011	0.040	0.022	0.068
	(0.116)	(-1.979)	(-1.191)	(-0.824)	(3.134)	(0.783)	(2.446)
Scotland/Wales	0.005	-0.011	-0.104	-0.029	0.008	-0.042	-0.003
	(0.124)	(-0.245)	(-2.485)	(-1.734)	(0.466)	(-1.202)	(-0.083)
Asked income tax question (δ_i)	-0.239	-0.322	-0.456	0.075	0.144	-0.134	-0.178
	(-0.721)	(-0.949)	(-1.447)	(0.529)	(1.097)	(-0.473)	(-0.637)
$\delta_i \times$ Income	0.034	0.035	0.065	-0.011	-0.016	0.018	0.017
	(0.912)	(0.898)	(1.728)	(-0.667)	(-1.124)	(0.567)	(0.539)
$\delta_i \times$ Adults	-0.061	-0.033	-0.166	0.051	0.010	-0.063	0.052
	(-0.757)	(-0.387)	(-2.071)	(1.599)	(0.348)	(-0.895)	(0.756)
Log likelihoods							
	-747.61	-901.75	-903.88	-876.36	-844.67	-970.31	-1004.09
Tests for exclusion of all tax instrument effects							
χ^2_3	3.66	1.11	7.25	2.45	1.48	0.91	1.65
P value	0.30	0.77	0.06	0.48	0.69	0.82	0.65

Ordered probit estimates: Asymptotic t-values in italics

Table 3: National Interest: Ordered Probit Estimates

	Health	Education	Police	Defence	Culture & arts	Environment	Public Transport
Age	-0.022	-0.012	0.043	0.021	0.002	-0.009	0.010
	(-2.081)	(-1.187)	(3.790)	(5.127)	(0.545)	(-0.977)	(1.054)
Female	0.066	0.015	0.048	0.036	0.016	-0.002	-0.065
	(2.062)	(0.460)	(1.464)	(2.857)	(1.649)	(-0.065)	(-2.293)
Adults	-0.072	-0.058	0.065	0.006	-0.027	0.025	-0.059
	(-1.359)	(-0.997)	(1.005)	(0.247)	(-1.539)	(0.451)	(-1.088)
Children	-0.187	0.071	-0.031	0.047	0.019	-0.026	-0.078
	(-2.647)	(0.953)	(-0.430)	(1.701)	(0.855)	(-0.438)	(-1.184)
Household income	0.076	0.073	-0.030	-0.011	-0.007	0.002	0.043
	(2.560)	(2.384)	(-0.933)	(-0.836)	(-0.642)	(0.081)	(1.465)
Manual worker	0.015	-0.034	0.018	0.026	0.001	-0.002	-0.033
	(0.492)	(-1.108)	(0.538)	(1.936)	(0.134)	(-0.079)	(-1.039)
Self-employed	-0.003	-0.056	0.096	0.018	-0.012	0.013	-0.094
	(-0.047)	(-0.833)	(1.469)	(0.633)	(-0.604)	(0.214)	(-1.710)
A Level education	0.077	0.039	0.091	0.015	0.054	0.146	0.164
	(1.634)	(0.804)	(1.650)	(0.684)	(2.747)	(3.143)	(3.337)
Higher Education	0.039	0.064	-0.028	-0.020	0.053	0.071	0.127
	(0.982)	(1.613)	(-0.663)	(-1.271)	(3.457)	(1.873)	(3.283)
Owner Occupier	0.021	0.023	0.018	-0.018	-0.001	0.017	0.009
	(0.630)	(0.644)	(0.513)	(-1.235)	(-0.070)	(0.514)	(0.275)
Car owner	0.012	-0.034	-0.012	0.028	-0.011	0.015	-0.035
	(0.328)	(-0.895)	(-0.303)	(1.875)	(-0.859)	(0.441)	(-0.963)
Private health	-0.060	0.030	0.003	0.004	0.009	0.050	-0.001
	(-1.390)	(0.639)	(0.071)	(0.193)	(0.553)	(1.193)	(-0.022)
Private school	-0.015	0.083	-0.026	0.020	0.001	0.030	0.017
	(-0.239)	(1.370)	(-0.399)	(0.781)	(0.067)	(0.474)	(0.314)
Tabloid reader	0.048	-0.014	0.029	-0.011	-0.045	-0.108	-0.129
	(1.489)	(-0.440)	(0.831)	(-0.804)	(-4.282)	(-3.894)	(-4.209)
Conservative	-0.134	-0.086	-0.038	0.009	-0.010	-0.086	-0.121
	(-2.927)	(-1.923)	(-0.819)	(0.464)	(-0.721)	(-2.129)	(-3.008)
Labour	0.019	0.109	-0.019	-0.014	0.031	0.093	0.154
	(0.567)	(3.201)	(-0.515)	(-0.984)	(2.453)	(2.702)	(4.601)
Lives in South	0.015	0.017	-0.059	-0.021	0.032	0.037	0.141
	(0.494)	(0.545)	(-1.759)	(-1.687)	(2.907)	(1.310)	(4.578)
Scotland/Wales	0.063	0.030	-0.108	-0.017	0.013	0.001	0.063
	(1.534)	(0.723)	(-2.536)	(-1.046)	(0.846)	(0.035)	(1.443)
Asked income tax question (δ_i)	0.139	0.094	-0.581	0.034	0.023	0.584	0.262
	(0.446)	(0.288)	(-1.920)	(0.247)	(0.215)	(2.176)	(0.866)
$\delta_i \times$ Income	-0.010	-0.013	0.079	-0.007	-0.004	-0.070	-0.029
	(-0.271)	(-0.347)	(2.093)	(-0.417)	(-0.336)	(-2.061)	(-0.826)
$\delta_i \times$ Adults	0.118	0.139	-0.120	0.034	0.003	0.066	0.051
	(1.519)	(1.791)	(-1.448)	(1.056)	(0.118)	(0.880)	(0.685)
Log likelihoods							
	-631.31	-666.56	-838.36	-889.69	-842.15	-898.06	-880.92
Tests for exclusion of all tax instrument effects							
χ^2_3	17.75	5.76	6.05	1.86	2.22	5.27	1.56
P value	0.00	0.12	0.11	0.60	0.53	0.15	0.67

Ordered probit estimates: Asymptotic t-values in italics

Table 4: Attitudes to Welfare Spending: Ordered Probit Estimates

Benefits for :	Unemployed people	Disabled people	Parents working on low incomes	Single parents	Retired people
Age	0.022	0.017	-0.013	-0.022	0.046
	(1.443)	(1.109)	(-0.837)	(-1.476)	(3.492)
Female	0.009	0.010	0.016	-0.020	0.017
	(0.277)	(0.296)	(0.528)	(-0.593)	(0.576)
Adults	0.074	0.037	0.005	0.053	0.018
	(1.570)	(0.833)	(0.124)	(1.137)	(0.457)
Children	0.006	-0.031	0.110	0.141	-0.021
	(0.075)	(-0.378)	(1.364)	(1.756)	(-0.297)
Household income	-0.066	-0.047	-0.023	-0.040	-0.036
	(-2.448)	(-1.735)	(-0.804)	(-1.460)	(-1.515)
Manual worker	0.020	0.090	-0.009	0.006	0.063
	(0.585)	(2.663)	(-0.277)	(0.174)	(1.969)
Self-employed	-0.063	-0.137	-0.031	-0.069	0.001
	(-1.100)	(-1.797)	(-0.445)	(-1.076)	(0.018)
A Level education	-0.011	-0.019	-0.037	-0.015	0.001
	(-0.226)	(-0.383)	(-0.771)	(-0.265)	(0.025)
Higher Education	0.059	0.028	-0.016	0.056	-0.011
	(1.410)	(0.657)	(-0.388)	(1.367)	(-0.285)
Owner Occupier	0.008	-0.040	-0.064	-0.059	-0.009
	(0.222)	(-1.103)	(-1.855)	(-1.658)	(-0.290)
Car owner	-0.040	0.064	0.058	-0.011	0.011
	(-0.914)	(1.530)	(1.463)	(-0.274)	(0.302)
Private health	-0.097	-0.029	-0.063	-0.101	-0.005
	(-2.212)	(-0.603)	(-1.298)	(-2.351)	(-0.129)
Private school	-0.049	0.087	0.111	-0.022	-0.015
	(-0.692)	(1.384)	(2.077)	(-0.315)	(-0.253)
Tabloid reader	-0.030	0.054	0.024	-0.045	0.077
	(-0.866)	(1.565)	(0.690)	(-1.249)	(2.469)
Conservative	-0.163	-0.088	-0.147	-0.108	-0.183
	(-3.940)	(-1.807)	(-3.313)	(-2.552)	(-4.126)
Labour	0.164	0.076	0.101	0.093	0.056
	(4.280)	(2.059)	(2.894)	(2.486)	(1.691)
Lives in South	0.020	0.090	0.001	0.067	0.039
	(0.596)	(2.644)	(0.018)	(1.951)	(1.344)
Scotland / Wales	0.142	0.054	0.036	0.073	0.052
	(3.106)	(1.245)	(0.869)	(1.640)	(1.387)
Retired	-0.085	-0.035	-0.000	-0.105	-0.051
	(-1.391)	(-0.572)	(-0.006)	(-1.703)	(-0.921)
Single parent	0.239	0.045	0.012	0.315	0.006
	(2.862)	(0.613)	(0.154)	(3.824)	(0.079)
Unemployed	0.318	0.071	0.045	0.056	0.009
	(4.347)	(1.121)	(0.636)	(0.784)	(0.154)
Disabled	0.086	0.182	0.106	0.060	-0.029
	(1.531)	(3.716)	(2.061)	(1.074)	(-0.613)
Log likelihoods					
	-947.14	-797.69	-799.13	-971.47	-816.05

Ordered probit estimates: Asymptotic t-values in italics

Table 5 : Household Interests: Correlation Matrix

Correlation coefficients

	Health	Education	Police	Defence	Culture	Environment
Education	0.45	.	.	.	.	.
.	(12.23)	.	.	.	.	.
Police	0.43	0.31	.	.	.	.
.	(11.63)	(6.37)	.	.	.	.
Defence	0.02	0.03	0.25	.	.	.
.	(0.43)	(0.63)	(6.71)	.	.	.
Culture and the	-0.07	0.14	0.08	0.38	.	.
.arts	(-1.51)	(3.20)	(2.09)	(8.93)	.	.
Environment	0.24	0.29	0.14	0.25	0.46	.
.	(5.85)	(7.67)	(3.49)	(6.62)	(11.55)	.
Public Transport	0.24	0.32	0.18	0.22	0.37	0.43
.	(6.04)	(7.81)	(5.18)	(5.76)	(10.33)	(13.40)

Conditional polychoric correlation coefficients: Asymptotic t-values in italics

Eigenvalues							
	2.50	1.47	0.97	0.59	0.57	0.51	0.40
Eigenvectors							
Health	0.34	-0.54	-0.00	-0.00	0.42	0.21	0.60
Education	0.39	-0.36	0.26	0.29	-0.66	0.31	-0.19
Police	0.34	-0.34	-0.58	0.01	-0.05	-0.60	-0.26
Defence	0.30	0.36	-0.64	-0.07	-0.02	0.60	-0.04
Culture and the arts	0.36	0.52	0.06	0.31	-0.25	-0.36	0.56
Environment	0.45	0.21	0.30	0.36	0.57	-0.00	-0.46
Public Transport	0.44	0.13	0.29	-0.83	-0.07	-0.08	-0.06

Table 6: Attitudes to Welfare Spending: Correlation Matrix

Correlation coefficients

	Unemployed people	Disabled people	Parents working on low incomes	Single parents
Disabled	0.38	.	.	.
	(12.32)	.	.	.
Working parents	0.42	0.39	.	.
	(13.59)	(11.60)	.	.
Single parents	0.53	0.30	0.46	.
	(16.38)	(10.66)	(14.43)	.
Retired	0.16	0.44	0.42	0.14
.	(6.99)	(11.65)	(12.10)	(3.82)

Conditional polychoric correlation coefficients: Asymptotic t-values in italics

Eigenvalues

	2.48	1.03	0.62	0.45	0.43

Eigenvectors

Unemployed	0.46	-0.43	-0.31	0.70	-0.14
Disabled	0.45	0.31	-0.69	-0.34	0.32
Working parents	0.50	0.05	0.59	0.09	0.63
Single parents	0.45	-0.49	0.18	-0.60	-0.40
Retired	0.37	0.69	0.21	0.15	-0.57

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