What explains attitudes towards tax levels?

A multi-tax comparison*

Working Paper in Economics, No. 225

September, 2006

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Abstract

We analyse Swedes' opinions about the level of taxation for eleven different taxes to see what taxes people are most reluctant to and why. The most unpopular tax is the real estate tax, while the corporate tax is the least unpopular. We find a strong self interest effect in attitudes, and for corrective taxes information increases acceptance. We perform two case studies of Swedish tax policy and find political economy reasons for the recent abolition of the gift and inheritance taxes, and weak support for the ongoing green tax shift from labour to environmental taxes.

Key words: tax policy, real estate tax, inheritance tax, gift tax, payroll tax, income tax, vehicle tax, alcohol tax, CO_2 tax on petrol and diesel, wealth tax, corporate tax.

JEL classification: H2, Q58, Z13

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* The paper has benefited from comments by Olof Johansson-Stenman.

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Both authors gratefully acknowledge financial support from the Swedish Environmental Protection Agency.

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1 Introduction

A general welfare state requires sizable tax revenues. Hence, politicians are concerned with maintaining sufficient tax revenues. However, politicians are also anxious to be re-elected and most people and potential voters tend to dislike taxes, since they reduce their consumption possibilities. A key question for policy makers is consequently how sufficient tax revenues can be raised at a minimized political cost. (Hettich and Winer, 1984)

This reasoning indicates that it is not sufficient to know that people prefer lower taxes; it is also important to know *what* taxes people are most and least reluctant to and *why*.[1] Different taxes meet different degrees of support among different groups, depending on tax bases and preferences.[2] It is therefore interesting to compare different taxes in terms of the determinants of public support. Such information can be useful in order to achieve an efficient tax system, for instance when combating socially inefficient lobbying and rent seeking (Stiglitz, 2002), and when contemplating design of information campaigns aiming at alleviate tax misperceptions.[3]

In this paper, we analyse the public opinion regarding the level of eleven different taxes in Sweden, which is the EU country with highest tax-to-GDP ratio.[4] Since it would be an almost insurmountable task to capture all taxes in Sweden, we have selected taxes that differ in three relevant respects: (a) *motives* (i.e. whether primarily motivated by redistribu-

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[1] See e.g. Hettich and Winer (1984, 1988), Gemmell et al. (2004) and Gill and Haurin (2001).

[2] Gemmell et al. (2004) study preferences for income and commodity taxes in the UK and find that tax preferences are dominated by self-interest.

[3] Gemmell et al. (2004) find that people with mispredictions tend to overestimate their tax liabilities.

[4] The Swedish tax-to-GDP ratio was 50.5 % in 2004.

tion, externalities, or by fiscal reasons), (b) *tax bases* and (c) *fiscal importance*. The taxes in focus are the real estate tax, inheritance tax, gift tax, payroll tax, municipal income tax, state income tax, annual vehicle tax, alcohol tax, tax on wealth, corporate tax, and the CO_2 tax on petrol and diesel.[5]

During recent years there has been a growing interest in the use of taxes for correcting market failures, so called Pigouvian taxes (Pigou, 1924; see Baumol & Oates, 1988 for an early text book), which are implemented in order to change behaviour and/or to internalize a social cost. The Swedish CO_2 tax on diesel and petrol is an example of such a tax. Pigouvian taxes differ from fiscally motivated taxes, where the primary purpose is to raise revenues and to affect behaviour as little as possible and thereby allowing the market mechanisms to work without the interference of distorting taxes. In Sweden the present government has implemented a so called green tax shift, where environmental taxes are increased while taxes on labour are decreased in parallel. One of our objectives is to find out whether there is any public support for this reform – measured by support for the CO_2 tax relative to taxes on labour – and if so, also to see if there are prospects to accelerate it. We find certain support for this, because the CO_2 tax is less unpopular than the taxes on labour income. However, the picture is complex and there are large differences between different respondents. Low income earners and car owners are more reluctant to the CO_2 tax than to labour income taxes, while highly educated respondents and those who worry about climate change tend to support a green tax reform.

[5] It should be noted that the survey was made in 2004, i.e. before the abolition of the gift and the inheritance taxes.

We ask for people's attitudes to the level of each of the eleven taxes, whether they regard them as too high, too low or as being at an optimal level. We use original survey data, with a net response rate of 64 %, of a random sample of Swedes, aged 15 – 85.

Section 2 contains a simple theoretical model and a discussion on some of the key aspects where one can expect opinions to differ between taxes. That section also contains our hypotheses that we test empirically. In Section 3 we present the data, and in Section 4 we discuss our model and econometric results, and also two Swedish policy cases. A concluding discussion in Section 5 ends the paper.

2 Generating hypotheses

We are interested in explaining people's preferences for various tax levels and we illustrate this with a simple model. Let us assume that individuals maximise their utility, U, of the consumption of a vector of goods and services, $\mathbf{C}$ and of the public sector, G.

$$U = U(\mathbf{C}, G) \ , \qquad (1)$$

where

$$\sum_{k=1}^{K} c_k \left(1 + \tau_k\right) = \sum_{i=1}^{n} Y_i \left(1 - \tau_i\right), \text{ and}$$

$$G = q\left[\sum_{i=1}^{n} \tau_i \sum_{h=1}^{H} Y_{ih} + \sum_{k=1}^{K} \tau_k \sum_{h=1}^{H} c_{kh} + \sum_{k=1}^{K} \beta_k \gamma_k \left(\tau_k\right)\right].$$

There are n different kinds of incomes, Y_i , each taxed at a certain rate, τ_i. The K different consumption goods, c_k are also taxed at different rates, τ_k, e.g. through excise taxes on fuel and alcohol.

There are H taxpayers in the economy. Tax revenues are used to finance the public sector, G. The quality by which it is governed is q, which is the quality of politicians. A high q implies that the politicians are successful in turning tax revenue into the public good. Some of the commodity taxes not only finance public activities; they also aim at preventing unwanted behaviour. For example, the alcohol tax prevents people from excessive alcohol consumption and the CO_2 tax reduces environmental damage. The "good" associated with the specific tax is $\gamma_k(\tau_k)$, which is increasing in the tax rate. The importance of this specific task is measured by $\beta_k \geq 0$.

When calculating the individual's preferred tax rates, we maximise (1) with respect to each tax rate. For income taxes, the preferred tax rate τ_i is determined by the following first-order condition:

$$U'_C Y_i = U'_G q \sum_h Y_{ih} \quad . \tag{2}$$

This means that the higher the individual's specific income Y_i, the lower is the preferred tax rate. On the other hand, the more he supports the public sector, the quality of the politicians, and the higher the others' income of the specific ΣY_{ih}, the higher the preferred tax rate will be.[6] The effect of the individual's total income is not clear. On the one hand, low income increases the marginal utility of consumption, which consequently makes the "own" tax effect more harmful. On the other hand, lower income generally implies more support from the public sector, which means that the marginal utility of the public sector increases.

[6] The marginal utility of G could reflect the opinion about the public sector as such, as well as the personal consumption of G.

For a commodity tax, the condition is similar:

$$U'_{c_k}\ \frac{c_k}{(1+\tau_k)} = U'_G q\left[\sum_h c_{kh} + \beta_k \gamma'_k\right] \qquad (3)$$

Also here the individual prefers a lower tax rate if his own consumption of the good is large and if his marginal utility of that specific good is high. The things speaking in favour of a high tax rate are the same as in the case of income taxes with one addition. In this case the specific good being financed by the tax is also of importance. A person who is concerned with the environment has a high value of β_k and thus favours higher environmental taxation. This is especially so if the person believes that the environmental tax is actually contributing to the improvement of the environment (i.e. γ'_k is high) and also if the quality of politicians is high; i.e., that the popularly elected are doing what they are expected to do.

With guidance from the above mentioned results, we can formulate the following hypotheses:

H1: An individual is more likely to prefer decreases of taxes that he/she is paying than of other taxes.

It follows from equations (2) and (3), that the more one is affected by a tax; the lower one wants it to be. Also Gemmell et al. (2004) found that self-interest explained a lot of tax preferences. From (2) and (3) we also see that the quality of politicians, *q,* affects the preferred rate of all taxes. It is more important when tax bases are large and when concern for a specific good is strong. If one does not trust politicians, this means that one believes that *q* is low and therefore prefers lower taxes. Hence,

H2: People who distrust politicians are more likely than others to be in favour of tax cuts and the effects are strongest for corrective taxes and for fiscal taxes.

We also control for a general attitude towards the public sector by controlling for political sympathies in the left – right dimension. Respondents who have left-wing sympathies generally prefer a larger public sector and those who have right-wing sympathies are less committed to a comprehensive public sector compared with those in the political middle. A high value of β_k in (3) means that people who worry about climate change should be more supportive of environmental taxes and those who consider excessive alcohol consumption as a large problem should prefer higher alcohol taxes than others. Hence, we state a third hypothesis:

H3: Corrective taxes are more supported by those who are concerned by the issue.

Some of the factors derived in (2) and (3) are not certain factors, but rather expectations. We are not certain about the quality of politicians and we may have misperceptions when it comes to real tax burdens as well as the effects of corrective taxes. Gemmell et al. (2004) found that misperception generally implies an overestimation of tax liabilities. Therefore we assume that information and education decrease the misperception and thereby increase the preferred tax levels.

H4: Information and education has a positive impact on preferred tax levels.

3 Empirical strategy

3.1 Data and descriptive results

We use survey responses from a mail questionnaire sent out in the autumn of 2004 to a random sample of 3,000 Swedes, aged 15 – 85, whose addresses were collected from the National Register. In total 1,774 individuals returned the questionnaire (net response rate is 64%). The sample is representative of the Swedish population at large (Nilsson, 2005).[7]

In Table 1 below the responses to the question "Do you think that the following taxes ought to be increased or decreased?", i.e. our dependent variables, are presented. The opinion balance measure to the far right in the table shows the share of respondents who wish to decrease the tax, minus the share who wishes to increase it. In general, when compared with suggestions to increase them, most people prefer to decrease taxes. Nevertheless, some of the taxes have a relatively strong support. For example, we see that for the full sample the opinion balance for the corporate tax is only (8 %)[8] and for the wealth tax (24 %). In this perspective it is also interesting to see that the CO_2 tax earns a rather strong relative "support" (36 %) being the third least unpopular tax of the eleven being studied. We also see that the real estate tax (70 %), inheritance tax (66 %) and gift tax (63 %) are the three taxes that most people prefer to decrease or completely remove. For the restricted sample of 701 respondents – consisting of those who have an opinion about the levels of all eleven taxes – we see that

[7] The SOM institute (Society-Opinion-Media) administers the data collection. The institute is managed jointly by the Department of Political Science, Public Administration and Journalism/Mass Communication at Göteborg University. See http://www.som.gu.se/english.htm for more information on the SOM institute.

[8] Note, however, that a large number of respondents have no opinion about this tax, which, presumably affect the outcome and partly explain the exceptionally low opinion balance. This is a tax that not many people are directly affected by. One reason for the large share of "no opinion" can thus be the relative anonymity.

the ‘ranking’ via opinion balance is identical, but we also see that there are differences when comparing the more exact distribution of support.

Table 1. *Attitudes towards different tax levels*

	No response	Ought to be significantly decreased /abolished	Ought to be slightly de-creased	Neither ought to be decreased nor increased	Ought to be slightly in-creased	Ought to be significantly increased	No opinion	Opinion balance
				Full sample, % ***(n=1690)***				
Real estate tax	1	39	32	17	1	0	10	+70
Inheritance tax	2	52	18	12	3	1	12	+66
Gift tax	2	48	19	14	3	1	13	+63
Payroll tax	3	14	36	25	2	0	20	+48
State income tax	2	12	40	32	5	0	9	+47
Annual vehicle tax	2	13	39	33	5	1	7	+46
Municipal income tax	2	8	42	35	5	0	8	+45
Alcohol tax	1	20	35	25	6	6	7	+43
CO_2 tax on petrol and diesel	2	19	30	29	10	3	7	+36
Wealth tax	2	25	18	24	13	6	12	+24
Corporate tax	5	6	15	29	11	2	32	+8
				Restricted sample, % ***(n=701)***				
Real estate tax	-	43	34	21	2	1	-	+74
Inheritance tax	-	58	20	16	4	1	-	+73
Gift tax	-	53	21	20	4	1	-	+69
Payroll tax	-	17	44	33	4	0	-	+57
State income tax	-	14	45	35	5	1	-	+53
Annual vehicle tax	-	24	38	28	6	5	-	+51
Municipal income tax	-	9	46	38	6	0	-	+49
Alcohol tax	-	13	40	40	7	1	-	+45
CO_2 tax on petrol and diesel	-	21	31	34	11	2	-	+39
Wealth tax	-	29	20	28	16	7	-	+26
Corporate tax	-	10	22	47	16	4	-	+12

The attitudes of tax levels were measured by the following question: ”Do you think that the following taxes should be increased or decreased?”

In Table 2 we present some crucial features of the included taxes, i.e., motivation, tax revenue and liability. As can be seen, the selected set of taxes capture a rather satisfying variety of combinations.

Table 2. Schematic description of taxes by motivation, revenues, and tax liability

Tax	Primary motivation [A]	Secondary motivation [B]	Revenues 2003, billion SEK [C]	Tax liable
Municipal income tax (on labour income)	Fiscal, aim to finance public goods and services.	Redistribution	403	Income earners
State income tax (on labour income)	Redistribution	Fiscal	33	Income earners, especially high income earners
Payroll tax	Fiscal, Social security	Redistribution	316	Employers
Corporate tax	Fiscal	Redistribution, especially from capital owners	40	Companies
Gift tax	Redistribution		0.3	Those receiving sizable gifts.
Inheritance tax	Redistribution		2	Those inheriting.
Wealth tax	Redistribution	Fiscal	5	Those owning wealth.
Real estate tax	Fiscal, tax base with low elasticity.	Redistribution	13	Those owning real estate.
Annual vehicle tax	Fiscal, tax base exhibit low elasticity.	Externality motivation, since car use give rise to externalities.	8	Those owning a car or a motor cycle.
CO_2 tax on petrol and diesel	Externality motivation.	Fiscal, low price elasticity of demand.	24	Those buying fuels for transport purposes cars or motor cycles.
Alcohol tax	Externality motivation.	Fiscal	11	Those buying alcohol.

[A] Primary motivation refers to the main explicit function of the tax.
[B] Secondary motivation refers to whether the tax fulfils other political goals. Note that fiscally motivated taxes, naturally, are used for something supposedly good, including transfer between individuals as well as within group of individuals over time. This implies that a fiscal motive is a prerequisite for many of the typical redistributive goals that a general welfare state is associated with (e.g. finance education, health care).
[C] Revenues are from Swedish Tax Agency (STA, 2005, table 4.1, 5.1, 6.9, and 7.11) and show the relative importance of the tax from a public budget perspective.

In Table 3, we present the summary statistics of our explanatory variables. It is important to note that, even though the full sample (those who have an opinion of at least one of the taxes) is representative for the population at large, the restricted sample differs from the original one.

In Table 3, the variables where the means differ significantly between the two samples are bold. We see that those who regard themselves as having good knowledge about society are more likely than others to have an opinion about all taxes, while those who think they have no or little knowledge are less likely to answer all the questions. The same goes for people living in low income households. We also see that females are quite heavily underrepresented in the restricted sample. Moreover, it is clear that house owners, those with access to a car and those who drink alcohol regularly, tend to be overrepresented in the restricted sample, i.e. compared to the population at large. Finally, we see that that the age composition differs between the samples.

Table 3. *Summary statistics*

Variable	Variable description	Full sample		Restricted sample (n=701)
		Obs	Mean	Mean
Political distrust	Trust for the Swedish Parliament is 1 or 2 on a five grade scale	1747	0.24	0.23
Political trust	Trustfor the Swedish Parliament is 4 or 5 on a five grade scale	1709	0.31	0.33
Subjective high knowledge	**Subjective knowledge about society is 7-10 on a scale 0-10**	1694	0.31	0.38
Subjective low knowledge	**Subjective knowledge about society is 0-3 on a scale 0-10**	1694	0.21	0.13
Regularly reading newspaper	Reading morning newspaper 6 or 7 days per week	1754	0.62	0.63
Female		1774	0.50	0.38
Age 15-30 years		1774	0.20	0.13
Age 31-60 years		1774	0.52	0.66
Age 61-85 years		1774	0.29	0.20
University or college	Studies at university or university degree	1743	0.29	0.32
High income	Household yearly income exceeds 400kSEK (single adult) or 600kSEK (two or more)	1653	0.19	0.21
Low income	**Household yearly income is less than 100kSEK (single adult) or 200kSEK (two)**	1653	0.33	0.25
Left	Political Left if 1 or 2 on a five grade scale from left to right	1682	0.34	0.33
Right	Political Right if 4 or 5 on a five grade scale from left to right	1682	0.33	0.30
Company owner		1494	0.10	0.12
House owner		1774	0.52	0.57
Access to car	**Has access to car in the household**	1744	0.84	0.89
Drinks alcohol every week	**Drinks alcohol once or several times per week**	1731	0.34	0.41
Worry climate change	Worried over climate change is 1 on a four grade scale from very to not at all	1697	0.37	0.36
Worry alcohol	Worried over increased alcohol consumption is 1 on a four grade scale from very to not at all	1699	0.23	0.19

3.2 Estimation method

In order to analyse the attitude towards decreased taxes we run logit regressions where the dependent variable is whether one thinks that the tax level ought to be decreased (=1) compared to other alternatives (=0) on the full sample. We also run logits where the dependent variable is if one wants to increase tax compared to the other alternatives. These regressions have different sample sizes, since we for each tax include all respondents who have an opinion about the tax in question. The results from these regressions are presented in Table 4.

For each tax we can then see what explains the attitudes. However, since we use different samples we cannot say anything about general opinions of different categories of respondents, such as women or low income earners. To be able to compare the estimates between tax regressions directly for each explanatory variable, we construct a restricted sample containing 701 respondents who have an opinion about all eleven taxes. The drawback with such a sample is of course that we miss those who have a very determined opinion about some taxes, but lack opinion about others. In Table 5 we present the results from regressions on attitudes towards decreases and increases of the taxes on the restricted sample (n=701).

Since respondents' attitudes towards levels of different taxes can be expected to correlate (e.g., a respondent's attitude towards the level of municipal income tax might be correlated with the attitude towards the state income tax) we control for this potential fact in the estimation via a seemingly unrelated procedure, i.e. acknowledging that the errors associated with the dependent variables may be correlated across "tax regressions".[9] The explana-

[9] In fact, we find that a hypothesis that coefficients are equal across models can generally be rejected, hence supporting the relevance of estimating tax specific regressions.

tory variables used in the estimations, of which all are dummy variables, are assumed to be exogenous.

4 Regression results

We present the results in three subsections. In 4.1 our focus is mainly upon what explains the attitudes towards each tax separately. In 4.2 we study the results from our restricted sample and make comparisons between the tax regressions. Finally, in 4.3, we present a more in depth discussion of two policy examples, i.e., the recent abolition of the Swedish gift and inheritance taxes and the public's support for a continued green tax shift where the CO_2 tax is increased and the tax on labour decreased.

Table 4. *Explanations of the attitude towards decreased tax (=1), logit coefficients (seemingly unrelated estimation procedure, n=1441).*

	Municipal income tax	State income tax	Payroll tax	Corporate tax	Gift tax	Inheritance tax	Wealth tax	Real estate tax	Vehicle tax	CO_2 tax	Alcohol tax
Decreased tax=1, increased tax or neither increase nor decrease =0											
Political trust	-0.175	-0.201	0.272	0.098	0.090	0.186	0.073	0.148	-0.157	-0.288**	0.090
Political distrust	0.618***	0.622***	0.396**	0.221	0.215	0.109	0.011	0.124	0.188	0.607***	0.397***
Subjective high knowledge of society	0.065	0.083	-0.364**	-0.001	-0.227	-0.280*	-0.081	-0.136	-0.214*	-0.356***	0.014
Subjective low knowledge of society	0.419***	0.330**	0.114	0.177	-0.300*	-0.216	-0.113	0.348*	0.323**	0.275*	-0.092
Regularly reading newspaper	-0.322**	-0.102	-0.158	-0.120	0.163	0.079	0.051	0.251*	-0.282**	-0.341***	-0.309**
Female	0.006	0.076	0.040	-0.080	0.330**	-0.089	-0.222*	0.144	0.352***	-0.237**	-0.428***
Age 15-30	-0.213	-0.208	0.365*	0.890***	0.455***	0.303*	-0.022	0.170	0.169	0.011	-0.030
Age 61-85	-0.008	0.181	0.096	-0.234	0.605***	0.540***	0.836***	0.597***	0.081	0.131	0.532***
University or College	-0.351***	-0.192	-0.032	-0.378*	0.022	0.196	-0.243*	-0.185	-0.714***	-0.608***	-0.761***
High income	0.043	0.184	0.023	-0.036	-0.186	-0.252	0.517***	-0.364**	-0.462***	-0.257*	-0.131
Low income	0.340**	0.510***	0.110	0.367	-0.030	-0.194	0.213	0.291	0.276	0.504***	-0.207
Left	-0.436***	-0.590***	-0.799***	-1.232***	-0.833***	-0.829***	-1.073***	-0.890***	-0.852***	-0.616***	-0.349**
Right	0.495***	0.686***	0.733***	0.823***	1.001***	0.828***	0.934***	0.406**	-0.308**	0.009	0.529***
Company owner			1.480***	1.158***							
Home owner								0.901***			
Access to car									0.698***	0.821***	
Drinks alcohol every week											1.060***
Worry climate change									-0.100	-0.537***	
Worry alcohol consumption											-1.066***
Constant	0.289*	0.098	0.392*	-1.007***	0.928***	1.431***	-0.175	0.801***	0.292	0.214	0.617***
Number of observations	1341	1325	1028	845	1264	1290	1278	1322	1341	1345	1360
Log Likelihood	-863	-826	-603	-443	-601	-580	-758	-608	-841	-830	-794

*p<0.1; **p<0.05; ***p<0.01.

Table 4. continued

	Municipal income tax	State income tax	Payroll tax	Corporate tax	Gift tax	Inheritance tax	Wealth tax	Real estate tax	Vehicle tax	CO_2 tax	Alcohol tax
	Increased tax=1, decreased tax or neither increase nor decrease =0										
Political trust	0.224	0.271	-0.004	-0.185	-0.345	-0.011	0.268	-0.488	0.208	0.216	-0.041
Political distrust	-0.267	-0.582	-0.034	0.098	0.075	0.271	0.540***	-0.230	-0.311	-0.414***	-0.280
Subjective high knowledge of society	-0.161	-0.287	0.520	0.379*	0.236	0.460*	0.045	-0.094	0.516**	0.375***	-0.229
Subjective low knowledge of society	-0.079	-0.998**	-0.599	-0.045	-0.105	0.117	0.129	-0.200	-0.081	-0.111	0.362*
Regularly reading newspaper	0.309	0.213	-0.699*	-0.425**	0.332	0.230	-0.190	-0.762*	0.574**	0.316	-0.048
Female	-0.495**	-0.652**	0.499	0.046	-0.391	-0.074	0.186	0.263	-0.187	0.027	0.210
Age 15-30	-0831**	0.048	-0.714	-0.810**	-0.546	-0.614	-0.075	-0.832	0.047	0.284	0.104
Age 61-85	-0.067	0.091	0.684	0.437**	-0.659*	-0.982**	-0.550***	-0.203	-0.220	-0.146	-0.345
University or College	0.514**	0.939***	-0.297	0.007	-0.310	0.077	-0.115	0.447	0.894***	1.006***	0.569***
High income	-0.172	-0.432	0.225	0.091	0.269	0.189	-0.195	0.376	0.849***	0.281	0.446**
Low income	0.040	-0.043	-0.242	-0.057	-0.028	0.684**	0.076	-0.268	-0.306	-0.434*	-0.257
Left	0.643**	0.860***	1.136***	0.800***	1.152***	0.986***	0.686***	2.070***	1.044***	0.845***	0.250
Right	-0.828**	-1.170**	-1.238*	-1.086***	-0.682	-0.314	-1.211***	1.094*	0.076	-0.164	-0.312
Company owner			0.179	-0.491							
House owner								-1.709***			
Access to car									-1.453***	-1.116***	
Drinks alcohol every week											-1.902***
Worry climate change									0.602**	0.796***	
Worry alcohol consumption											1.428***
Constant	-2.796***	-2.979***	-3.576***	-1.178***	-3.228***	-3.783***	-1.266***	-4.122***	-3.213***	-2.202***	-2.022***
Number of observations	1341	1325	1028	845	1264	1290	1278	1322	1341	1345	1360
Log Likelihood	-282	-237	-143	-396	-215	-223	-612	-109	-274	-470	-447

*p<0.1; **p<0.05; ***p<0.01.

Table 5. *Explanations of the attitude towards tax changes (=1), logit coefficients, restricted sample (seemingly unrelated estimation procedure, n=701).*

	Municipal income tax	State income tax	Payroll tax	Corporate tax	Gift tax	Inheritance tax	Wealth tax	Real estate tax	Vehicle tax	CO_2 tax	Alcohol tax
Decreased tax=1, increased tax or neither increase nor decrease =0											
Political trust	-0.255	-0.243	0.328	0.114	0.023	0.309	0.054	0.113	0.092	-0.124	0.272
Political distrust	0.516***	0.637***	0.415**	0.279	-0.005	-0.028	0.145	0.098	0.038	0.424**	0.430**
Subjective high knowledge of society	0.191	0.042	-0.327*	-0.140	-0.248	-0.256	0.009	-0.014	-0.089	-0.307*	0.124
Subjective low knowledge of society	0.384	0.370	0.143	-0.166	-0.290	-0.196	-0.111	0.050	0.109	-0.006	0.124
Regularly reading newspaper	-0.399**	-0.063	-0.226	-0.145	0.292	0.115	0.104	0.230	-0.474***	-0.514***	-0.548***
Female	0.050	0.100	-0.110	0.038	-0.073	-0.386*	-0.188	0.136	0.366**	-0.463***	-0.559***
Age 15-30	-0.014	0.132	0.290	0.990***	0.838***	0.645*	0.214	0.219	0.177	0.059	0.081
Age 61-85	0.186	0.247	-0.093	-0.095	0.509****	0.576***	0.988***	0.607***	-0.135	-0.213	0.266
University or College	-0.464**	-0.431**	-0.197	-0.500**	-0.086	0.070	-0.321	-0.149	-0.897***	-0.756***	-1.025***
High income	-0.095	0.341	0.140	0.151	-0.023	-0.279	0.357	-0.758***	-0.616***	-0.190	0.180
Low income	0.626*	0.773**	-0.062	0.079	0.739*	0.546	0.140	-0.372	0.361	0.798**	0.165
Left	-0.256	-0.402**	-0.870***	-1.302***	-1.057***	-1.242***	-1.272***	-0.874***	-0.696***	-0.618***	-0.351
Right	0.700***	1.044***	0.964***	0.722***	1.069***	0.746**	0.866***	0.642**	-0.071	0.097	0.537**
Company owner			1.368***	1.272***							
Home owner								1.035***			
Access to car									0.669**	1.057***	
Drinks alcohol every week											0.967***
Worry climate change									0.033	-0.734***	
Worry alcohol consumption											-0.928***
Constant	0.200	-0.101	0.445*	-0.927***	0.918***	1.548***	-0.251	0.628**	0.268	0.304	0.757***
Number of observations	701	701	701	701	701	701	701	701	701	701	701
Log Likelihood	-446	-425	-404	-368	-353	-325	-411	-339	-447	-429	-402

Table 5. continued

	Municipal income tax	State income tax	Payroll tax	Corporate tax	Gift tax	Inheritance tax	Wealth tax	Real estate tax	Vehicle tax	CO_2 tax	Alcohol tax
	Increased tax=1, decreased tax or neither increase nor decrease =0										
Political trust	0.514	0.356	0.009	-0.187	-0.644	-0.357	0.328	-0.396	0.423	0.355	-0.179
Political distrust	-0.017	-0.618	-0.114	0.005	0.145	0.520	0.482**	-0.537	0.076	-0.049	-0.508
Subjective high knowledge of society	-0.652*	-0.104	0.528	0.440*	-0.144	0.262	-0.161	-0.237	0.299	0.255	-0.323
Subjective low knowledge of society	-0.320	-0.885	-0.634	0.113	-0.023	0.596	-0.169	-0.282	0.630	0.396	-0.017
Regularly reading newspaper	0.083	0.357	-0.826**	-0.543**	0.252	0.132	-0.187	-0.580	0.875***	0.207	0.241
Female	-0.308	-0.248	0.764**	0.019	-0.070	0.146	0.085	-0.231	-0.321	0.063	0.433*
Age 15-30	-1.282*	-0.274	-0.559	-1.068***	-1.792**	-1.940**	-0.230	-0.691	-0.075	-0.048	0.207
Age 61-85	0.281	-0.101	0.749*	-0.443*	-0.050	-0.549	-0.448**	0.190	0.323	0.135	0.046
University or College	1.059***	1.153**	-0.554	0.130	0.035	0.275	-0.188	0.717	1.459***	1.452***	0.704**
High income	-0.284	-0.989	0.765	0.064	-0.024	0.068	0.004	1.951***	0.717*	0.060	0.055
Low income	-1.083	-1.003	0.369	-0.222	-0.291	-1.007	-0.189	0.760	-0.248	-1.17*	-0.169
Left	0.924**	0.605	1.194**	0.908***	1.507***	1.426***	0.829***	2.666***	0.913**	0.779**	0.096
Right	-0.663	-1.189**	-1.615*	-1.425***	-0.771	-0.334	-1.310***	0.272	-0.101	-0.050	-0.573
Company owner			-0.176	-0.608*							
Home owner								-2.178***			
Access to car									-1.249***	-1.344***	
Drinks alcohol every week											-1.542***
Worry climate change									0.610**	0.918***	
Worry alcohol consumption											1.211***
Constant	-3.087***	-3.006***	-3.467***	-1.191***	-3.289***	-3.750***	-1.054***	-4.442***	-3.798***	-2.323***	-2.221***
Number of observations	701	701	701	701	701	701	701	701	701	701	701
Log Likelihood	-142	-136	-111	-303	-132	-130	-338	-63	-157	-242	-208

*p<0.1; **p<0.05; ***p<0.01.

4.1 Attitudes towards different taxes

Proceeding from Table 4, i.e. the full sample, we can analyse what affects the attitudes towards each of the eleven taxes. We notice that, for both municipal and state income taxes, different kinds of knowledge are very important, which is in line with our H4. First, those who regard themselves as having very low knowledge about society are more likely than others to advocate income tax cuts. Second, respondents with university education are more likely to or even want to increase these taxes. Third, regular newspaper readers are less likely than others to be in favor of a decreased municipal income tax. One possible explanation is of course the one emphasised in Gemmell et al. (2004), i.e., that those who mispredict tax liabilities tend to over-estimate them. It could be the case that uninformed respondents think that taxes are higher than they actually are and therefore are more likely to be in favour of income tax cuts. It could also be the case that those with more knowledge have a greater understanding of the public sector and therefore a higher expected marginal utility of it. This would make them more supportive towards higher income taxes than others.

Also when it comes to taxes paid by employers, the knowledge variables appear to be important. Those who think they know a lot about society are less likely to advocate decreased payroll taxes, while regular newspaper readers are less likely support increases of both the payroll and the corporate taxes. The youngest respondents are also more likely than others to be in favour of cuts in these taxes, as are company owners. This supports our H1, i.e., that preferences are driven by self interest.

The wealth tax has least support among the oldest respondents. Also high income earners are more likely than others to support a decreased or abolished wealth tax. We do not have any information about the respondents' taxable wealth, but it is likely that wealth

is correlated with high income and that more old people hold wealth, especially in terms of real estate. The real estate tax is the most unpopular of our studied taxes, and not very surprisingly house owners are the most reluctant to it. Regular newspaper reading also decreases the support for this tax, which may be a result of exceptionally strong negative media coverage of this tax during recent years. Perhaps somewhat surprisingly, however, high income earners are less likely than lower income groups to support a decreased real estate tax.

For the annual vehicle tax, a high level of perceived knowledge about society increases the support. Car owners are more likely to prefer a tax cut and those who worry about climate change want the vehicle tax to be higher. These results support our first and third hypotheses. Moreover, women are less likely to support tax cuts, and high income earners and those with university education are more likely to advocate an increased vehicle tax than others.

The attitudes towards the CO_2 tax are affected by car ownership and concerns for climate change. We also see that low income earners are more eager than others to cut the tax, while high income earners are less likely to support a lower tax. For the CO_2 tax, political trust and distrust are also important. The relationship is 'symmetrical'; those who trust politicians are less likely than others to plead for a decreased tax, while those who distrust the politicians want the CO_2 tax to be lower. Knowledge is important also for this tax. In this case also the motivation of the tax could be an explanation. The corrective nature of the tax may be complex to understand, so that information could increase understanding and acceptance for the CO_2 tax.

The motive for the alcohol tax is also corrective and also for this tax different kinds of knowledge increase support of the tax. Those who drink at least once a week tend to be more eager than others to get a tax cut while those who worry about increased alcohol con-

sumption in society are more likely to want a higher alcohol tax. These results also support our first and third hypotheses.

4.2 How do different properties affect the preferred tax structure?

Hence, attitudes to different taxes are explained differently and it is too simplified to only talk about people's general attitudes towards taxation as such.

When analysing Table 5 with the same sample in all regressions, we can make other comparisons than in the previous section, by looking at the size of the coefficients. The taxes that people were most eager to reduce were the now abolished inheritance and gift taxes together with the real estate and alcohol taxes. The corporate tax is the only tax that people actually did not want to cut. People generally do not want to raise taxes and the strongest resistance is towards increasing the real estate tax. The least resistance is towards increased wealth tax, followed by increased corporate tax.

We see that political distrust implies a stronger wish for lower taxes on income (municipal, state, payroll), CO_2, and alcohol, while the factor is insignificant for the other taxes. In H2 we hypothesised that political distrust should have a stronger impact on taxes generating large tax revenues and on taxes where the state is paternalistic in the sense of aiming at changing behaviour (CO_2 and alcohol). This seems to be the case. Those who distrust politicians do not want to hand over too much power and do not trust them to correct market failure in a proper way.

We include the political left/right dimension to control for a general attitude towards taxation and the public sector. Leftists are more likely to support higher taxes and rightists tend to be more positive to decreasing taxes. The only exceptions are, interestingly,

the vehicle and CO_2 taxes where we cannot find any right wing effect and the alcohol tax, where left wing voters are not more supportive than those in the political middle. These taxes are all corrective, rather than fiscal, which could be the reason why the traditional left/right scale is less applicable.

Subjective knowledge loses statistical significance in the restricted sample. This is probably due to the fact that more people in the restricted sample have high subjective knowledge. However, we see that regular newspaper readers are less supportive towards decreases of the municipal income tax, the vehicle tax, the CO_2 tax and the alcohol tax. Regular newspaper readers are also more positive towards an increase of the vehicle tax, but more reluctant to increase the payroll tax. This can be due to the aforementioned knowledge effect of corrective taxes.

University studies increase support for income and corrective taxes. However, on purely redistributive taxes we find no such effects. Hence, highly educated respondents would like to see a tax structure with more environmental and less redistributive taxation.

There seems to be a self interest dimension judging from the fact that home owners are more negative to the real estate tax, those with access to a car are more negative towards the CO_2 tax and the vehicle tax, those who drink regularly are more negative to the alcohol tax, and company owners more positive to decreasing the payroll tax and the corporate tax. Note also that high income earners are less likely to be positive to decreasing taxes on real estate and vehicles, while they are more positive to decreasing the wealth tax. In addition, we find that low income earners are more positive to decreases of municipal and state income taxes and the CO_2 tax, indicating that those who supposedly are most depending on the welfare state tend to be the most positive to decreasing the taxes financing it. However, as

we noted in the theoretical model, we also have an income effect, indicating that a tax cut would mean a lot to a low income household and this latter effect seems to dominate.

Women are more positive to decreasing the vehicle tax, while they are less positive to decrease the CO_2 tax and the tax on alcohol. They are more willing to increase the payroll tax and also the alcohol tax. We also note that older people (age 61-85 compared to age 31-60) are more likely to be positive to decreased taxes on wealth, gifts, inheritances, alcohol, and real estate, while younger people are more likely to be positive to decreased payroll taxes, the corporate tax, and taxes on gifts and inheritances.

4.3 Two policy examples

In 2004, a Government Commission (SOU 2004:36) proposed reductions in the inheritance, gift and wealth taxes in Sweden. The Social Democratic government chose not only to reduce, but to completely abolish the gift and inheritance taxes, while it made no change to the wealth tax. Many people, especially economists, were surprised by this unwillingness to cut the wealth tax, which many think is a highly inefficient tax.

However, from a political economy perspective, a support maximizing government sets taxes to minimize political costs rather than maximising efficiency.[10] Abolishing the gift and inheritance taxes had great support among the Swedish electorate. The two taxes that people were most anxious to decrease were these two taxes, and even left-wing respondents,

[10] Hettich and Winer (1988) show that the equilibrium tax structure in an economy governed by a support-maximising government differs from the optimal taxation structure that takes no political concern.

who are generally reluctant to tax cuts, wanted the inheritance tax to be reduced.[11] A reduction of the wealth tax would have had much lower support. Apparently, respondents do not find the idea of cutting the wealth tax particularly attractive. Especially left-wing voters are reluctant to a lower wealth tax implying a high political cost of reducing it. Also concerning tax revenues, abolishing the inheritance and gift taxes came at a much lower cost than abolishing the real estate tax would.[12]

During the period 2001- 2010, the Swedish government has imposed a so called green tax reform. This reform is constituted by a shift, which means that taxes on environmentally harmful activities are raised while the tax on labour is reduced. One of the aims is to reduce emissions of carbon dioxide, which contribute to the greenhouse effect. Another is of course to incorporate distributional and welfare consequences in environmental politics. In the budget for 2006 the Government proposes a green tax shift of SEK 3.6 billion.[13] Of concern here is whether we from our figures can say something about the prospects for this shift to gain popular support. If we glance at Table 1, we see that taxes on labour income are more unpopular than the CO_2 tax. Hence, one could expect a general support for this kind of tax reform. In fact, apart from the wealth and corporate taxes, the CO_2 tax is the most "popular" tax to increase out of the eleven taxes. However, the attitudes differ across voters. For exam-

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[11] From Table 1 we remember that about 50% of the respondents wanted to abolish or decrease these two taxes a lot.

[12] The tax revenues from the inheritance and gift taxes were together SEK 2.3 billions in 2003, while the real estate tax brought 13 billions to the Treasury.

[13] The total shift amount to approx. 3,3 billion Euro and until the year 2005, the shift amounted to approx. 1,5 billion Euro. In exchange for the tax increases in 2006, there will be tax reductions amounting to an equivalent sum. Income tax will be lowered by SEK 2.5 billion by raising the basic income tax allowance. Solo entrepreneurs who take on an employee will pay reduced employer's contributions. www.sweden.gov.se

ple, although our reference respondent is not particularly eager to decrease the CO_2 tax, low income earners and car owners certainly are. That car owners are less supportive may not come as a surprise. However, that low income earners – i.e., one of the main groups to whom the shift is addressed – are more anxious to reduce the CO_2 tax than income taxes, is startling. Seen from our results, they hardly support the reform at all. Those who read the newspaper at least six days a week, however, think that the payroll tax is important to reduce, while they do not want to see a reduced CO_2 tax. The same goes for respondents with a university education who do not want to reduce the CO_2 tax, and actually regard this tax as the least undesirable to increase out of the eleven. Both these facts point to the potential importance of knowledge and information. It is likely that newspaper readers and people with higher education have more knowledge about taxes than others. If this is the case, increased support, also among low income earners and car owners could possibly be gained through increased information.

If taxes on labour should be cut, support for decreasing the payroll tax is stronger than decreasing the tax on labour income. From economic theory we know that the real tax incidence should be independent of whether the tax is levied on the supply or demand side, so that a payroll and earned income tax would be equivalent. Apparently this does not hold for the voters' attitudes. They want the payroll tax to be lower, but want the state income tax to remain constant.

5 Concluding Discussion

This paper has pointed at the relative public opinions of different taxes. As expected, we find that most Swedes would like most taxes to be decreased, but we also find that taxes differ in acceptance. The most unpopular tax is the tax on real estate, which 77 % of our restricted

sample would like to cut, while only 32 % wishes to see a reduced corporate tax. Not only total support differs between taxes. Also different categories of respondents differ in relative support of taxes. In accordance with our first hypothesis we find a strong self-interest effect on attitudes. In comparison, house owners are more eager to cut the real estate tax than others, company owners are particularly reluctant to payroll and corporate taxes, car owners want to decrease the vehicle and the CO_2 tax more than others, while those who drink alcohol on a regular basis are more willing than others to decrease the alcohol tax.

Our second hypothesis stated that those who distrust politicians prefer lower taxes than others. This is supported by our data for the most revenue bringing taxes and for the corrective taxes, as hypothesised. Corrective taxes are also most supported by those concerned with the issue, as hypothesised in H3. Those who worry about climate change are more positive than others to the vehicle and CO_2 taxes, while those who worry about the increased alcohol consumption in society do not want the alcohol tax to be lower. We also find that different kinds of information and education actually increase the preferred tax levels of income and corrective taxes.

Our forth hypothesis stated that education and knowledge should increased preferred tax levels. This turns out to hold for corrective taxes and for the municipal income tax, but not for the other taxes.

We also performed two minor case studies of Swedish tax policy – the abolition of the gift and inheritance taxes and the green tax reform. We concluded that the abolition of the two transfer taxes had great support among voters. The investigation that proposed a reduction of these taxes also proposed a reduction of the wealth tax, which is far more popular, especially among left-wing voters. This could be an explanation to why the Swedish Social

Democratic government chose to abolish the two most unpopular taxes while keep the more popular tax.

The Swedish green tax shift, where the CO_2 tax is increased and the tax on labour decreased, gain, although only implicitly studied via the relative support for the respective taxes, rather week support. However, education and (subjective) knowledge are important factors for attitudes to the CO_2 tax. Given that these factors correlate with 'informed' individuals, information campaigns on the functioning of the CO_2 tax as compared to other climate policy instruments; it might be possible to generate additional support for the tax shift. However, there are counteracting opinions among different categories, where low income earners think that the CO_2 tax is the most desirable to decrease after the inheritance and gift taxes.

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