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Why do you want lower taxes? Preferences regarding municipal income tax rates*

Niklas Jakobsson†

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Abstract

The factors shaping people's preferences for municipal labour income tax rates in Sweden were assessed, using survey data. The tax rate actually faced by the respondents had explanatory power for their attitudes towards the tax rate only when a few socio-demographic explanatory variables were included. When a richer set of variables were included the association disappears. The hypothesis that this small or nonexistent effect from the actual tax rate is caused by a Tiebout bias finds no support, but IV-estimations indicate that the actual municipal tax rate may be of importance for the attitudes towards the tax rate. People with higher education, regularly reading a newspaper, agreeing with the political left, and stating that they were satisfied with the municipal services were less likely to want to decrease the municipal tax. People with low income, stated low knowledge about society, and agreeing with the political right were instead more likely wanting to decrease the municipal tax.

Keywords: tax preferences, attitudes, income tax

JEL classification: H24

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1 Introduction

Individual income taxes are an important part of government revenues in all western countries. To be able to collect these taxes - and since politicians want to get reelected - these taxes need to be perceived as legitimate. What determines people's preferences about income taxes is therefore of great interest. Are people satisfied with the taxes they pay? Do they vote with their feet, by moving, when they can, to pay taxes that accord with their preferences? And what determines their preferences? Are self-interest and misperceptions important?

These questions are central in this paper, which focuses on Swedish municipal taxes on labour income. Sweden has among the highest taxes in the world (OECD, 2005). And municipal labour income taxes are the largest source of revenue for the Swedish public sector, making them very important for the financing of the public sector, and very important for individuals since it is the largest tax they pay (STA, 2006).[1]

The earliest study (to my knowledge) of individual tax preferences (Jane and Likert, 1962) used interview data from Detroit, Michigan. Studying both attitudinal and socio-economic variables, Jane and Likert found that the most important variables were those reflecting self- interest; income and education were most important for preferences about the income tax. Membership in labor unions, political party preference, and preferences about the size of the public sector were also important.

Edlund (1999, 2000) used Swedish survey data to investigate people's opinions about taxes on earned income (including those at the national level). He found that most people were positive to the income tax, preferring a progressive system, with lower rates for low income earners, and higher for higher. Younger people, highly educated, and high income earners favored less progressivity (less difference in the rates).

Research in the U.S. found that people had little understanding of tax policies (Roberts et al., 1994), with no strong opinions about taxes (Steinmo, 1998). Using Swedish survey data about tax progressivity, Edlund (2003) found that people had a good understanding of tax progressivity, suggesting that the U.S. finding of little understanding is not necessarily generalizable to other countries.

[1] In Sweden the tax rates on labour income are decided by the municipalities, and vary substantially across municipalities (of which there are 290). Unearned income is taxed only at the national level in Sweden, where there also are surtaxes on labour incomes above certain levels.

If people misperceive the taxes they pay, then having more knowledge could affect their opinions. In particular, if they overestimate the taxes they pay, and underestimate the benefits received, then having more knowledge might induce them to support higher taxes, or vice versa (Gemmell et al., 2004). Using Swedish survey data, Hammar et al. (2009) investigated people's opinions about eleven types of taxes, and found that people who said that their knowledge about society was low preferred to reduce municipal income taxes more than did others. In line with the results in Edlund (1999) the highly educated were less likely to prefer reduced municipal income taxes, and more likely to support raising them. The same was true for frequent newspaper readers. Those who believed in and supported the public sector more (i.e. who identify themselves as left, not right, on the political scale), and those who had a favorable impression of politicians, also generally supported municipal income taxes. Kumlin (2007) found, however, that dissatisfaction with public services in fifteen western European countries was unrelated to support for the welfare state and the taxes required to finance it.

Though previous studies have usually included income as a variable, they have not (to my knowledge) investigated the effect of varying tax rates on people's opinions about taxes in more depth. Using Swedish survey data from 1979 and 1991 Mörk (2005) studies the difference between local politicians' and voters' preferences for local taxes. Using a small number of control variables and not controlling for a Tiebout bias (as compared to this study) she finds the local tax rate to be negatively related to people's willingness to increase the tax.

This paper extends Hammar et al. (2009) by including actual current municipal labour income tax rates in assessing what factors are important for people's willingness to change them. My findings are that the tax rate actually faced by survey respondents was important only in some specifications in determining the respondent's tax preferences. Why there is not a more clear effect from the actual tax rate on tax preferences may be due to Tiebout sorting but the evidence for this is not strong. A possible explanation is that people do not know the actual tax rate in their municipality (or in others). Also, people with higher education, regularly reading a newspaper, agreeing with the political left, and stating that they were satisfied with the municipal services were less likely to want to decrease the municipal tax. People with low income, stated low knowledge about society, and agreeing with the political right were instead more likely wanting to decrease the municipal tax.

The next section describes the data, while section 3 presents the estimations and results. Section 4 summarizes and draws conclusions.

2 Data

The main data is responses from a survey mailed to a random sample of $3,000$ Swedes aged $18-85$ by the SOM Institute (www.som.gu.se/english) in 2004. Addresses were collected from the National Register, which includes all legal residents of Sweden; $1,774$ individuals (64%) responded (from 267 of the 290 municipalities). The respondents are representative of the Swedish adult population (Nilsson, 2005). Data from Statistics Sweden (www.scb.se) on municipal income tax rates in 2004 was also used.

The dependent variable in the analysis is people's attitudes towards the municipal income tax, shown in Table 1. More specifically, people were asked the following question: "Do you think that the following taxes should be increased or decreased?". Attitudes towards the corporate income tax and the real estate tax are shown for comparison. The corporate income tax appears to be the most popular - though more people favor decreasing than increasing it - and the real estate tax is clearly the least popular.[2]

Contra Steinmo (1998), most people seem to care about the taxes they pay. Half the respondents favored decreasing the municipal income tax; 8% favored decreasing it a lot, while only 5% favored increasing it (a little); nevertheless, 82% were fairly satisfied with it, favoring none or only minor changes. In comparison, 21% favored decreasing the corporate income tax a lot or a little, and 71% favored decreasing the real estate tax a lot or a little. Thus more people were at least minimally satisfied with the municipal income tax.[3]

Table 1: Swedish tax attitudes, 2004, in percent

	Abolish/ decrease a lot	Decrease a little	Keep unchanged	Increase a little	Increase a lot	No opinion	No response
Municipal income tax	8	42	35	5	0	8	2
Corporate tax	6	15	29	11	2	32	5
Real estate tax	39	32	16	1	0	10	1

No of obs. 1,683

[2]The real estate tax is scheduled to be abolished in 2008 and replaced with a municipal fee.
[3]This is also true when compared to all 11 taxes in the survey (Hammar et al., 2009).

The actual municipal tax rates faced by the respondents (Table 2, below) varied from 28.9% (in Kävlinge) to 34.04% (in Dals-Ed). The mean was 31.58%, the median 31.74%, indicating a distribution skewed slightly to the right. The three municipalities with most inhabitants had rates of 30.35% (Stockholm), 31.8% (Göteborg), and 31.23% (Malmö), while the three with the least inhabitants all had a slightly higher rate of 32.6% (Bjurholm, Sorsele and Dorotea).

Table 2: Swedish municipal income tax rates, 2004, in percent

Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum
28.9	30.35	30.93	31.74	32.2	32.7	34.04

Table 3 provides summary statistics for the independent variables. There were approximately equal numbers of men and women; 21% were 65 or older; 32% had low income; 29% had studied at a university; 14% had preschool children; 28% worked in the municipal sector; 35% lived in or near one of three large cities; one-third regarded themselves as sympathetic to the political left, one-third to the right; 62% regularly read a morning newspaper; 46% reported fairly good or very good public services in their municipality; 34% trusted their local politicians.

Opinion balance (shown in the last column of Table 4, below) is an index indicating to what degree people favor (in this case) decreasing the municipal income tax.[4] There were some clear patterns in the distribution. A Wilcoxon rank-sum test gave at hand that the differences between men and women, young and old, people with preschool children and those without, and people living in cities and those who did not were not statistically significant. Those with high or low income were more likely to favor decreasing the tax (and those with middle income were more likely to favor increasing it), the difference between low and middle income earners was statistically significant. Those with low education were much more likely to favor decreasing the tax (and less willing to increase it). Similarly, private sector employees were much more likely to favor decreasing the tax (and less likely to favor increasing it).

As expected, people supporting the political left were much less likely to favor decreasing the tax (and more likely to favor increasing it) than were those supporting

[4]Opinion balance = 2 ∗ "increase a lot" + 1 ∗ "increase a little" - 1 ∗ "decrease a little" - 2 ∗ "decrease a lot".

Table 3: Summary statistics, independent variables, 2004

	Dummy = 1 if	Mean	Standard deviation	Percentage 0	Percentage 1	Obs
Women	women	0.494	0.50	50.6	49.4	1659
Old (65-85)	65-85 years	0.215	0.41	78.5	21.5	1659
Tax base	per capita as percentage of national mean	99.21	14.61			1519
Grants	intergovernmental grants per capita in thousands SEK	3.894	4.715			1519
Children	child 0-6 in household	0.135	0.34	86.5	13.5	1659
Low income	household yearly income is less than 11k Euro (single adult) or 22k Euro (two or more)	0.322	0.47	67.8	32.2	1565
High income	household yearly income exceeds 43k Euro (single adult) or 65k Euro (two or more)	0.322	0.47	67.8	32.2	1565
Low education	no high school degree	0.291	0.45	70.9	29.1	1637
High education	studies at university or university degree	0.291	0.45	70.9	29.1	1637
Municipal employee	working in municipal sector	0.280	0.45	72.1	28.0	1431
Newspaper	read morning newspaper 6-7 days/week	0.618	0.49	38.2	61.8	1645
Left	1 or 2 on a political scale 1-5	0.339	0.47	66.1	33.9	1595
Right	4 or 5 on a political scale 1-5	0.329	0.47	67.1	32.9	1595
Good services	services in municipality fairly good or very good, last 12 months	0.463	0.50	53.7	46.3	1470
Low knowledge	1-3 on a scale 1-10	0.200	0.40	80	20.0	1621
Low trust	low trust for municipal board	0.34	0.47	65.8	34.2	1618
Urban	living in one of 3 largest city regions	0.346	0.48	65.4	34.6	1657
Change '03	percentage point change in municipal tax-rate 2002-2003	0.56	0.71			1654
Change '04	percentage point change in municipal tax-rate 2003-2004	0.86	0.92			1654
Moved	moved to the municipality less than 3 years ago	0.09	0.29	91.1	8.9	1051

the right. Regular newspaper readers, and those self-reporting high social knowledge, were also less likely than others to favor decreasing the tax (and more likely to favor increasing it). Those reporting good public services in their municipality, and those who reported trusting their municipal politicians, were less likely to favor decreasing the tax. All these differences were statistically significant according to the Wilcoxon rank-sum test. Finally, those living in low tax municipalities (the 10% of the sample paying the lowest tax rate) were less likely than the 10% living in high tax municipalities to favor decreasing the tax (and more likely to favor increasing it). This difference were though not statistically significant.

Table 4: Distribution of Swedish municipal income tax preferences, 2004, in percent

	Abolish/ decrease a lot	Decrease a little	Keep unchanged	Increase a little	Increase a lot	No opinion	Opinion balance*
Full sample	8.4	42.7	35.3	5.2	0.1	8.3	-54.1
Women	8.4	40.0	35.7	3.9	0.1	11.8	-52.7
Men	8.3	45.3	34.9	6.4	0.1	4.9	-55.3
Young (18-30)	9.9	35.9	36.2	2.1	0.0	15.9	-53.6
Old (65-85)	6.5	44.9	32.0	4.8	0.3	11.5	-52.5
Children	10.3	42.0	36.6	5.8	0.0	5.4	-56.8
Children	8.1	42.8	35.1	5.1	0.1	8.8	-53.7
High income	7.6	46.5	35.0	4.3	0.0	6.6	-57.4
Middle income	7.1	43.3	39.2	6.1	0.0	4.4	-51.4
Low income	10.5	41.3	30.0	4.8	0.4	13.1	-56.7
High education	6.5	39.0	40.9	6.5	0.0	7.1	-45.5
Low education	9.6	44.1	31.2	4.7	0.2	10.3	-58.3
Municipal employee	8.3	38.3	39.8	6.0	0.3	7.5	-48.3
Private employee	8.8	46.5	33.3	5.0	0.1	6.4	-58.9
Newspaper	6.6	42.8	37.8	6.0	0.1	6.8	-49.8
Newspaper	11.3	42.5	31.7	3.8	0.2	10.5	-60.9
Left	4.8	35.3	43.1	9.2	0.0	7.6	-35.7
Right	9.7	52.0	30.5	2.7	0.0	5.1	-68.7
Good services	6.5	41.6	39.4	5.9	0.3	6.3	-48.1
Bad services	11.8	48.4	27.5	5.2	0.0	7.2	-66.8
High trust	6.3	38.1	44.4	7.6	0.0	3.6	-43.1
Low trust	10.7	47.0	30.7	5.6	0.2	5.8	-62.4
High knowledge	7.1	42.1	40.5	6.4	0.0	4.0	-49.9
Low knowledge	13.3	43.5	23.5	4.3	0.3	15.1	-65.2
Urban region	8.4	46.2	32.6	5.4	0.2	7.3	-57.2
Not urban region	8.4	42.2	35.6	5.5	0.1	8.2	-53.3
High municipal tax	9.6	44.0	35.0	3.0	0.0	8.4	-60.2
Low municipal tax	9.7	39.5	36.8	6.1	0.0	7.9	-52.8

*Opinion balance = 2 ∗ "increase a lot" + 1 ∗ "increase a little" - 1 ∗ "decrease a little" - 2 ∗ "decrease a lot". Bold characters indicate a statistically significant difference between the pairs.

3 Estimation and results

Following a general choice framework developed by Bergstrom et al. (1982) and used in a similar context by Ahlin and Johansson (2001) and Ågren et al. (2007) I assume

that an individual's preferred municipal income tax rate is given by $t_i^* = f(\mathbf{x}_i)$, where $\mathbf{x}_i$ is a vector of variables explaining t_i^*. An individual expresses dissatisfaction with the actual tax rate (t_i) if it deviates from her preferred level with a fraction of at least δ. That is, individuals want to "decrease tax rate" if $t_i^* < t_i - \delta$, "keep unchanged" if $t_i - \delta \leq t_i^* \leq t_i + \delta$, and "increase tax rate" if $t_i^* > t_i + \delta$.

Simple theoretical models of demand for local public goods imply that income, intergovernmental grants, and tax base should affect demand for local public goods and thus also tax preferences (Bergstrom et al., 1982; Ahlin and Johansson, 2001). Hess and Orphanides (1996) construct a model showing that families with more children prefer higher taxes than others. Edlund (2003) argues that social class should also be an important explanatory variable, as a self-interest effect. For example, manual workers tend to have a higher risk of unemployment, and thus greater need for public support. Since women may be more dependent on the public sector when it comes to employment, benefits and social services, Edlund (2003) argues that women should be less likely to promote lower taxes. Courant et al. (1979) argues that public employees should have preferences for more public spending and thus should favor higher taxes. In line with the self-interest assumptions also elderly and municipal employees are more dependent on the municipal sector and thus should be less likely to promote a decrease of the municipal income tax.

Ordered probit regressions were used to analyze attitudes to the municipal tax rate, with willingness to change it - ranging from 1 for "abolish/decrease a lot" to 5 for "increase a lot" - as the dependent variable. Table 5 (below) shows the estimated coefficients, and Table 6 (below) shows the marginal effects.[5] Specification 1 focuses on a few socio-demographic variables, chosen following the discussion above.[6] The municipal tax rate itself had a negative and statistically significant effect. Low income did have a statistically significant negative effect, indicating a tendency of those with low income to favor reduced municipal tax rates, the same is true for high income earners. That low income earners like to cut the tax may be due to an income effect; this tax has a large effect on their relatively small income. These results are also similar to the results in Edlund (1999) and Hammar et al. (2009). On the other hand, having at least some higher education had a statistically

[5]In Table 8 in the appendix, the corresponding OLS estimations are shown. The OLS estimates corresponds well with the ordered probit estimates.

[6]Using clustered standard errors for the tax rate variable do not change the results in any of the three specifications.

significant positive effect (while having low education had a negative but not statistically significant effect), perhaps indicating that they do not overestimate the taxes they pay (cf. Gemmell et al. (2004)). It is also the case that higher education is somewhat associated with living in low tax municipalities (see first step in Table 9), so the reason that they are less likely to promote a decreased tax may be that they live in low tax municipalities, not that they have more knowledge than others. Gender, being old, and having preschool children did not have statistically significant effects; this does not support the earlier presented theoretical arguments indicating that females, elderly, and families with children should be more supportive of taxes used to finance public services, due to self-interest. The tax base in the municipality where the respondent lived, and intergovernmental grants to that municipality were not statistically significant.

Specification 2 includes two new variables expected to affect preferences regarding municipal taxes: whether or not respondents were regular newspaper readers, and whether or not they were municipal employees. While the previous coefficients remain little changed, both of the new variables had statistically significant effects. Regular newspaper readers were more supportive of municipal taxes, perhaps because they are better informed about the taxes they pay, and what the tax payments are used for, as proposed by Gemmell et al. (2004). Regularly reading a newspaper is (as higher education) associated with living in a low tax municipality (see first step in Table 9), so the reason that they are less likely to promote a decreased tax may be due to the fact that they live in low tax municipalities, not that they have more knowledge. This problem will be discussed in the end of this section. Municipal employees also tended to support municipal taxes, which could reflect self-interest, but could also reflect commitment to the public services they help to provide. This is in line with the results in Ahlin and Johansson (2001), where they show that municipal employees in Sweden have preferences for more spending on local schooling. From the discussion above these results are what we should expect.

Specification 3 adds five "value judgement" variables: supporting the political left, or the political right; perceiving good municipal services; distrust of local politicians; and having self-described low knowledge about society. Pseudo R^2 is higher with these new variables included, also a link test for model specification implies that this specification is correct while the other two are not. Since the pseudo R^2 is low the validity of this result can be questioned.

Table 5: Estimation of attitudes towards municipal income tax, 2004, ordered probit

	(1)	(2)	(3)
Tax rate	-0.079**	-0.071*	-0.046
	(0.036)	(0.038)	(0.041)
Tax base	-0.006	-0.006	-0.008
	(0.004)	(0.004)	(0.005)
Grants	-0.009	-0.012	-0.019
	(0.013)	(0.013)	(0.015)
Women	-0.016	-0.073	-0.034
	(0.059)	(0.066)	(0.072)
Old (65-85)	0.114	0.053	0.117
	(0.079)	(0.087)	(0.098)
Children	-0.039	-0.053	-0.004
	(0.085)	(0.089)	(0.096)
Low income	-0.154**	-0.144*	-0.159*
	(0.070)	(0.076)	(0.083)
High income	-0.143*	-0.187**	-0.124
	(0.080)	(0.086)	(0.093)
Low education	-0.075	-0.115	-0.113
	(0.071)	(0.077)	(0.086)
High education	0.201***	0.19**	0.212**
	(0.074)	(0.08)	(0.085)
Municipal employee		0.136*	0.026
		(0.075)	(0.081)
Newspaper		0.224***	0.235***
		(0.067)	(0.074)
Left			0.312***
			(0.085)
Right			-0.277***
			(0.089)
Good services			0.139*
			(0.072)
Low trust			-0.047
			(0.074)
Low knowledge			-0.259***
			(0.094)
Cut 1	-4.507	-4.185	-3.621
	(1.256)	(1.366)	(1.475)
Cut 2	-3.002	-2.645	-1.986
	(1.254)	(1.364)	(1.473)
Cut 3	-1.563	-1.213	-0.496
	(1.252)	(1.363)	(1.472)
Cut 4	-0.148	0.183	0.904
	(1.268)	(1.377)	(1.485)
Observations	1430	1257	1093
Log likelihood	-1576	-1375	-1154
Pseudo R^2	0.008	0.016	0.043

Dependent variable ranges from 1 for "abolish/decrease a lot" to 5 for "increase a lot". Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The coefficients on political views (left and right) are highly significant, as is the coefficient on low knowledge about society. The coefficient on perceived good municipal services is less significant, while that on the level of distrust is not statistically significant at conventional levels. Reverse causality may be a problem when it comes to the variables on political views, though not including these variables do not change the significance levels and marginal effects of the other variables very mutch. An explanation why tax base and intergovernmental grants do not have statistically significant effects (as is also the case in Mörk (2005)) could be that people do not know or assess this information when it comes to their preferences for the municipal income tax rate.

While most of the previous coefficients (and their significance levels) are little changed the coefficient on being a municipal employee is now insignificant. Municipal employees tend to support the political left more than the right, including these variables indicates that it is political views rather than employer that is important in determining the level of support for municipal taxes. Also, the coefficient on high income is now not statistically significant. Apparently, after controlling for political views and level of knowledge about society, perceptions about public services, and newspaper readership, the pure effect of income on support for municipal taxes becomes less discernible. As in the other specifications, gender, being old, or having preschool children also had no statistically significant effects.

The coefficient on the tax rate itself is smaller (and not statistically significant) than in the other specifications. Thus the tax rate that people actually face in their municipality did not seem to have much affected their level of support for municipal taxes in this specification. But what drives this result? As noted above, high education and regularly reading a newspaper is associated with living in a low tax municipality. Excluding both these variables (*High education* and *Newspaper*) turns the coefficient on actual tax rate statistically significant at the 10% level. Another variable for indicating media consumption (if the respondent listens to or watches local news broadcasts regularly) is not associated with if the respondent lives in a low tax municipality. Including it as an explanatory variable in place of *Newspaper* shows that it has no explanatory power for attitudes to the tax rate, and it does not change the significance levels or marginal effects of the other variables very much. This is an indication of that it is not information per se that is of importance for tax preferences. Also, the tax base and intergovernmental grants are associated

Table 6: Marginal effects based on ordered probit estimations of attitudes towards municipal income tax, 2004

	Abolish/ decrease a lot	Decrease some	Keep unchanged	Increase
Tax rate	0.006	0.012	-0.013	-0.005
Tax base	0.001	0.002	-0.002	-0.001
Grants	0.002	0.005	-0.005	-0.002
Women	0.004	0.009	-0.010	-0.003
Old (65-85)	-0.014	-0.032	0.033	0.013
Preschool children in home	-0.001	0.001	-0.001	-0.000
Low income	0.022*	0.040**	-0.046*	-0.015**
High income	0.017	0.032	-0.036	-0.012
Low education	0.015	0.029	-0.033	-0.011
Higher education	-0.026***	-0.058**	0.060**	0.022**
Municipal sector employee	-0.003	-0.007	0.007	0.003
Regular newspaper reader	-0.032***	-0.060***	0.069***	0.022***
Political left	-0.038***	-0.085***	0.088***	0.034***
Political right	0.038***	0.070***	-0.081***	-0.027***
Good public services	-0.018*	-0.037*	0.040*	0.014*
Low trust for politicians	0.006	0.012	-0.014	-0.005
Low social knowledge	0.038**	0.062***	-0.077***	-0.023***

Marginal effects for continuous variables, and first difference for dummies following specification 3, Table 5. *Increase a lot* not presented due to few observations. *** p<0.01, ** p<0.05, * p<0.1

with the actual tax rate (see Table 8), excluding these two explaining variables makes the actual tax rate statistically insignificant in all three specifications (i.e. also in specification 1 and 2).[7] The results regarding the effect of the actual tax rate are clearly sensitive to model specification, and only in some specifications it is statistically significantly associated with tax attitudes. In the next section the possible effect of the actual municipal tax on attitudes towards this tax will be investigated further.

Based on the coefficients from Specification 3, Table 6 (below) shows the marginal effects on the probability of a respondent choosing various levels of support for municipal taxes (for the dummy variables, these are actually first differences). Because of too few observations, the column *Increase a lot* is meaningless and therefore not presented here. Starting with the actual tax rate, a one percentage point higher tax rate (evaluated at the mean tax rate) meant a two percent higher probability of a respondent wanting to decrease the municipal tax somewhat or a lot, but as

[7]These results are available upon request.

we have seen, that result was not statistically significant at conventional levels in this specification.[8] Moving from the minimum tax rate to the maximum tax rate increases the predicted probability of a respondent wanting to decrease the municipal tax somewhat or a lot with 9.2%.

Turning to the statistically significant effects. Low income earners were, compared to middle income earners, 6% more likely to want to decrease the tax rate some or a lot, and 2% less likely to want to increase it. Respondents with higher education, and regular newspaper readers, were 9% less likely wanting to decrease the tax rate and 2% more likely wanting to increase it. Compared to those in the middle politically, those who supported the Left were 13% less likely to want to decrease municipal taxes somewhat or a lot, 9% more likely to want to keep them unchanged, and 3% more likely to want to increase them, while those supporting the Right were 11% more likely than those in the middle to want to decrease taxes, 8% less likely to want to keep them unchanged, and 3% less likely to want to increase them. Respondents believing that the municipal services were good were 6% less likely wanting to decrease the tax rate and 1% more likely wanting to increase it, while respondents believing that their knowledge of society was low were 10% more likely wanting to decrease the tax rate, and 2% less likely wanting to increase it.

The effect of going from a tax base a half standard deviation below the mean (92% of the mean tax base) to a half standard deviation above the mean (107% of the men tax base) is to increase the probability of of wanting to decrease the tax rate some or a lot with 4.6%. A standard deviation increase in intergovernmental grants increases the predicted probability of a respondent wanting to decrease the municipal tax somewhat or a lot with 3.4%. But these effects were not statistically significant.

3.1 Tiebout bias

Why does the actual tax rate not seem to have a more clear effect on respondents' attitudes towards municipal taxes? It is possible that some kind of Tiebout effect was at work (Tiebout, 1956). The municipal labour income tax is the only tax that varies across municipalities in Sweden, and respondents might be more satisfied with them because of the possibility of moving to a municipality with a tax rate more to

[8]For specification 1 and 2 this marginal effect was about 3%, this is not presented here.

their liking. An indication of this is that the municipal income tax is the tax that most people are satisfied with according to the data used in this study.

If location of residence was exogenous and respondents were randomly distributed over municipalities, we would expect that those paying higher taxes would be more supportive of lowering tax rates than those paying lower taxes to start with. In a Tiebout setting, where location is endogenous, any who did not like the tax rate in their municipality could move to another, with a tax rate more to their liking. In this case, the estimated coefficient of the effect of tax rates on desire to change them would be underestimated in our regressions. That is, some of those who prefer low tax rates might already have moved to lower tax municipalities. The more their choice of residence had already been affected by the municipal tax rate, the smaller the coefficient we would find for the effect of the tax rate. We could call this a Tiebout bias. Following the strategy to cope with a possible Tiebout bias proposed by Rubinfield et al. (1987), when studying demand for local public schooling in the U.S., this can be described as follows.[9] An individual's preferred municipal tax rate is given by

$$t_i^* = \beta_0 + \mathbf{x}_i'\beta + \varepsilon_i, \tag{1}$$

where t_i^* is individual i's preferred municipal tax rate, and $\mathbf{x}_i$ is a vector of variables (gender, age, having preschool children or not, income, political orientation, etc.). All individuals in a municipality will not have the tax rate they prefer, because they may have moved there (or not moved away) based on other factors. The difference between the actual rate they pay (t_i) and their preferred tax rate (t_i^*) can be expressed as

$$t_i - t_i^* = \gamma_0 + \mathbf{x}_i'\gamma + u_i. \tag{2}$$

Variables in (2) include variables in (1); for example, income might affect both the preferred tax rate and mobility. There can also be variables in (2) not affecting the preferred tax rate; some β and γ might be zero. If ε_i and t_i are correlated there is a Tiebout bias; demand for the tax rate affect the choice of residential municipality.

Here I will use four variables assumed to affect the preference municipality mis-

[9] Ahlin and Johansson (2001) used the same method to test for Tiebout sorting when studying demand for local public schooling in Sweden.

match but not the preferred tax rate. One indicates whether the individual lives in one of the three major urban regions in Sweden (*Urban*), meant to measure the availability of municipality choice. There are multiple municipalities within commuting distance in each region, and this should affect the mismatch (decrease it, since it is possible to choose from several municipalities with different tax rates), but not tax rate preference. By the same token, a variable indicating a recent move is included (*Moved*), since more recent movers should be more satisfied with the tax rate in the municipality they have chosen to move to. The other two variables indicate whether or not there was a change in the municipal tax rate from 2002 to 2003, or from 2003 to 2004 (*Change '03* and *Change '04*). Since moving is costly, people might choose not to move even though the tax rate has recently changed from their preferred level. A large change in the tax rate would, at least if it was unexpected, make the mismatch larger, that is more people would not be satisfied with the municipal tax rate they face.[10]

Using these variables (*Urban*, *Moved*, *Change* '03, and *Change '04*) as instruments for the actual tax rate we can test for a potential Tiebout bias, and in the case of a bias, come closer to the causal effect of the actual municipal tax rate on the attitudes towards this tax. The instrumental variable regressions, as well as an OLS comparison, are presented in Table 7.[11] The dependent variable in the first step is the actual tax rate in the municipality where the respondent lives. The dependent variable in the second step is the level of support for municipal taxes, ranging from 1 for "abolish/decrease a lot" to 5 for "increase a lot". A modified Breuch-Pagan test (not presented) suggests that heteroskedasticity is not a problem so I do not use robust standard errors (the results do not change if I do).

The Hausman test does not suggest that the IV-specification is preferable for any of the tested combinations of instruments. That is, the null that the municipal tax rate is exogenous is not rejected.[12] The Cragg-Donald statistic indicates that the instruments are not weak, and the Sargan test suggests that the instruments

[10]This choice of variables follows Rubinfield et al. (1987) and Ahlin and Johansson (2001).

[11]In the IV-estimation carried out here OLS is used since the tests are easier to carry out, the estimates are very similar using ordered probit instead. The full results from OLS using the original specifications are presented in Table 8 in the appendix. In Table 9, also in the appendix, the full first and second step of the preferred IV-estimation is presented.

[12]All possible combinations of these four instruments were tested, the specifications presented here were those closest to pass the Hausman test. The results are thus robust to the inclusion of different instruments.

Table 7: Testing for Tiebout bias

	OLS	IV 1	IV 2	IV 3
		Second stage		
Tax rate	-0.030	-0.131*	-0.122*	-0.121*
	(0.026)	(0.069)	(0.069)	(0.069)
		First stage		
Urban		0.117*	0.115	
		(0.070)	(0.071)	
Change '03		-0.374***	-0.375***	-0.342***
		(0.046)	(0.046)	(0.041)
Change '04		0.791***	0.790***	0.778***
		(0.066)	(0.067)	(0.065)
Moved			-0.074	
			(0.090)	
Observations	1093	1091	1085	1091
F-value	6.25			
Hausman p-value		0.110	0.145	0.156
Cragg-Don. F-value		62.45	46.40	92.12
Sargan p-value		0.359	0.145	0.495

Estimated with 2SLS. Only results for tax rate and instruments presented. In the appendix, Table 9, the full first and second stage of $IV1$ is presented. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

are valid. This suggests that a Tiebout bias is not a problem in this setting, but there are several problems with this approach to test for a Tiebout bias. Rubinfield et al. (1987) stressed that the choice of instrumental variables in this procedure is not simple; the result of the Hausman test should therefore be accepted only with some caution. Although the tests indicate that the chosen instruments are not weak (Cragg-Donald), and that they are valid in all presented specifications (Sargan test) it can thus be of interest to assess these estimations closer. Even though it is not possible to reject the null of no Tiebout bias, when the municipal tax rate is instrumented for, the coefficients get considerably larger (and statistically significant at the 10% level) than in the OLS counterpart (see second stage in Table 7). The point estimate for the tax rate in the presented instrumented regressions is about four times larger than in the OLS case. This is at least an indication of the fact that actual tax rates matters for attitudes.

But, why is not the case for Tiebout sorting stronger? One reason could be that people are not aware of the different tax rates available in nearby municipalities, or if they live in a high or low tax municipality. In this case their desire to change

the municipal tax rate might depend, to some extent, on misperceptions of how large their tax rate actually is. An indication of this is that people have unrealistic expectations about taxes and government budgets: about 64% of the respondents would like to decrease their tax rate, while only 27% would like to decrease the public services provided by the public sector financed by those taxes. Another reason why people might not move because of differences in municipal tax rates is "editing", whereby people rule out less important factors in their decision making (Kahnerman and Tversky, 1979). The municipal tax rate may be such a less important factor. John et al. (1995) found that, although there is some support for Tiebout sorting, there are generally more important factors when it comes to decisions on where to live.

4 Conclusion

Coming back to the questions in the opening paragraph. People are not completely satisfied with their municipal tax rates, but are more satisfied with them than with other taxes. People living in high tax municipalities are to some extent more likely to want lower tax rates, and people living in low tax communities are to some extent more likely to want higher tax rates. It is tempting to interpret this quite modest effect of the actual tax rate on tax preferences as a Tiebout effect so that people have moved to municipalities with their preferred tax rate, and thus not like to change the tax, but the evidence for this is not very strong. Another complementary explanation of why the actual tax rate has a modest effect on the desire to change the tax rate is that people might not know the actual tax rate in their municipality, or how it compares to tax rates in nearby municipalities.

Since better-informed people may be less likely to want to decrease tax rates, measures to increase public knowledge about taxes may be important for the legitimacy of income tax collections. But it is also the case that better-informed people (highly educated and regular newspaper readers, but not those reporting a high social knowledge) tend to live in low tax municipalities so that may be what drives the result. That is, well-informed people may not like to change the tax rate, not because they are well-informed but because they live in low tax municipalities. Future research should focus more on this issue; to get more clear cut results is important for policy making in this area.

Possible self-interest variables, such as being a municipal employee, having young children, or being 65 or older, do not seem to be important in determining people's desire to change tax rates. Those with low and high income (as compared to middle income earners) are more likely to want to decrease their tax rate, however. Political views seem to be important in determining people's tax preferences: those who support the political right are more likely to want to decrease tax rates, while those who support the left are less likely. Of course, the self-interest factors might affect political views, not tax preferences directly. Also, reverse causality may be a problem when it comes to the variables on political views, though not including these variables do not change the results regarding the other variables very much.

To further address the questions concerning what is important for peoples tax preferences it would be interesting to ask whether people know their actual tax rates, and if they know what their tax payments are used for. This would make it possible to distinguish whether people who know what their taxes are used for have different preferences regarding their tax rates than those who do not.

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A Appendix

Table 8: Attitudes towards municipal income tax, 2004, OLS

	(1)	(2)	(3)
Tax rate	-0.053**	-0.048*	-0.030
	(0.024)	(0.026)	(0.027)
Tax base	-0.004	-0.004	-0.005
	(0.003)	(0.003)	(0.003)
Grants	-0.006	-0.008	-0.012
	(0.008)	(0.009)	(0.010)
Women	-0.010	-0.049	-0.023
	(0.039)	(0.044)	(0.045)
Old (65-85)	0.074	0.032	0.070
	(0.053)	(0.058)	(0.062)
Children	-0.025	-0.034	-0.002
	(0.057)	(0.060)	(0.062)
Low income	-0.102**	-0.094*	-0.097*
	(0.047)	(0.051)	(0.053)
High income	-0.097*	-0.127**	-0.081
	(0.054)	(0.058)	(0.060)
Low education	-0.049	-0.076	-0.073
	(0.048)	(0.052)	(0.055)
High education	0.136***	0.129**	0.136**
	(0.050)	(0.052)	(0.054)
Municipal employee		0.092*	0.017
		(0.050)	(0.052)
Newspaper		0.149***	0.148***
		(0.045)	(0.047)
Left			0.199***
			(0.055)
Right			-0.176***
			(0.057)
Good services			0.088*
			(0.046)
Low trust			-0.028
			(0.047)
Low knowledge			-0.163***
			(0.060)
Constant	4.544***	4.298***	3.815***
	(0.843)	(0.909)	(0.940)
Observations	1430	1257	1093
R^2	0.018	0.035	0.090

Dependent variable ranges from 1 for "abolish/decrease a lot" to 5 for "increase a lot". Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Testing for Tiebout bias, IV 1

	Step 1	Step 2
Tax rate		-0.131*
		(0.069)
Tax base	-0.015***	-0.006***
	(0.004)	(0.00)
Grants	0.019**	-0.010
	(0.010)	(0.010)
Women	0.030	-0.019
	(0.049)	(0.046)
Old (65-85)	0.103	0.078
	(0.067)	(0.063)
Children	-0.156**	-0.022
	(0.066)	(0.062)
Low income	-0.076	-0.105**
	(0.057)	(0.053)
High income	-0.038	-0.091**
	(0.064)	(0.060)
Low education	-0.015	-0.077
	(0.058)	(0.055)
High education	-0.106*	0.114**
	(0.058)	(0.055)
Municipal employee	0.071	0.028
	(0.055)	(0.052)
Newspaper	-0.152***	0.132***
	(0.050)	(0.048)
Left	-0.006	0.199***
	(0.058)	(0.054)
Right	-0.059	-0.183***
	(0.061)	(0.058)
Good services	-0.046	0.89*
	(0.049)	(0.046)
Low trust	0.056	-0.023
	(0.051)	(0.048)
Low knowledge	-0.003	-0.163***
	(0.064)	(0.060)
Urban	0.117*	
	(0.070)	
Change '03	-0.374***	
	(0.046)	
Change '04	0.791***	
	(0.066)	
Constant	33.131***	
	(0.383)	
Residual		0.19
		(0.12)
Observations	1091	1091
F-value	23.52	
Hamuman p-value		0.110
Cragg-Don. F-value		62.45
Sargan p-value		0.359

Dependent variable in step 1 is actual tax rate. In step 2 municipal tax rate attitudes. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1