

On the Size of Political Jurisdictions: Preference Matching in Local Governments*

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Abstract

When designing a multi-level government state one must not only make decisions about the number of levels, but also decide the size of the units. While economics of scale and the existence of externalities speak in favor of large government units, accountability and a better possibility to tailor output to local needs and preferences (preference matching) speak for keeping down the size of each unit. This paper examines the preference matching-argument. Using survey data we find, first, that the smaller the political jurisdiction is, the better is the match between local politicians' and their voters' preferences for local services. Second, we find that local politicians have better knowledge about their voters' preferences in small local governments. These results indicate that the size of the political jurisdiction matters for the chances of voters' preferences being implemented.

Keywords: decentralization, jurisdictional size, preference matching, local public services

JEL Codes: H40, H72

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1. Introduction

When designing a multi-level government state one must not only make decisions about the number of levels, but also decide the size of the units on each level. A natural starting point when doing this is to turn to the large literature on fiscal federalism originating from Musgrave (1959) and Oates (1972). Much of the traditional fiscal federalism literature assumes benevolent decision-makers maximizing a social welfare function. Recently, political economists have however started to model the behavior of governments more systematically, taking institutions and processes into account. Lockwood (2005) presents a survey on the political economy perspective on the fiscal federalism literature. He concludes that while economics of scale and the existence of externalities speak in favor of centralization, democratic arguments like accountability and preference matching speak in favor of decentralization.¹

In this paper, the focus is on preference matching. Apart from being an argument for decentralization, we argue that preference matching also can be used as an argument for keeping down the size of political jurisdictions.² Preference matching is related to implemented policy; the more the implemented policy is in line with voters' preferences, the better is the preference matching. One way to test whether preference matching is good would hence be to compare outcomes with voters' preferences.³ This is however not trivial, since there are many other factors that influence outcomes. In this paper we therefore suggest an alternative way of investigating preference matching, namely to analyze the prerequisites that

¹ In the early work (see, e.g., Oates, 1972) policy uniformity was the main argument against centralized provision of public goods. The arguments against decentralization on the other hand remain very much the same in the early literature as in the more recent political economy literature.

² When preference matching is used as an argument against centralization (rather than small jurisdictions) the theoretical model one has in mind is typically a legislative model along the lines of Baron & Ferejohn (1989) where there will be a bias in a centralized system for the legislative to minimize the cost of projects rather than maximize their net benefits. Lockwood (2002) modifies the model by Baron and Ferejohn and shows that with centralization, the provided projects will be independent of regional preferences and depend only on the net spillovers. Allowing for heterogeneity within regions, Besley & Coate (1997) show that voters will have incentives to use strategic delegation when choosing representatives, something that may lead to the aggregate surplus not being maximized. In this paper we will argue that preference matching can be an argument for small political jurisdiction. The chances for voters and politicians to interact are namely larger in small local governments and each group's information about the other group will therefore be better in small local governments. This will be discussed more later on in this paper. Other papers discussing the correct size on political jurisdictions have taken their starting point in the median voter model and they rest on the assumption that the population is more homogenous in small jurisdictions, see, e.g., Alesina, Baqir & Hoxby (2004), Alesina & Spolaore (1997) and Bolton & Roland (1997).

³ There are some papers that empirically study preference matching in decentralized settings, see, e.g., Faguet (2004) and Azfar, Kähkönen & Meagher (2001). These papers find some support for the hypothesis that preference matching is better in decentralized settings.

must be fulfilled if voters' preferences are to be implemented. These prerequisites will depend on how the political process works. In this paper we think of the political process in the following way: Decisions are made by politicians that are elected by voters. Voters can build their decisions at the election booth either on politicians' election promises or on politicians' performance in last election period (that is, use retrospective voting).⁴ These two alternatives imply different prerequisites for a good preference matching. Let us discuss these two alternatives and the prerequisites that they imply in turn.

First, assume that voters take politicians' election promises into account when casting their vote. Given that politicians strive to win elections, the natural thing for them to do is then to promise to give voters what they want, and hence to choose their election promises according to voters' preferences (this is the mechanism in the median voter model).⁵ However, politicians typically have preferences over the preferred policy themselves. Alesina (1988) has shown that if full commitment is not possible, rational voters will understand that politicians will implement these preferred policies if elected. Hence, even if politicians promise something else before the elections, these promises will not be credible. Voters will therefore elect politicians based on the politicians' preferences, not on their election promises, and politicians' preferences are also what will be implemented in the end.⁶ In this case, a prerequisite for voters' preferences to be implemented is that voters elect politicians with the same preferences as they have themselves. This is the first topic that we will examine in this paper.

The reason for assuming that politicians implement their own preferred policy is the lack of commitment possibilities. However, the election process is not a one-shot game but one that is repeated many times. In a world where voters use retrospective voting and evaluate politicians' performance during the last election period when deciding how to cast their vote in the next election, there will be an incentive for politicians to deviate from the strategy that is optimal in the short run.⁷ Politicians that want to get re-elected will namely choose to implement the policy preferred by the voters or at least take voters' preferences into

⁴ See Persson & Tabellini (2000) for a discussion of these types of models.

⁵ The desire to be elected is typically motivated by the existence of rents or some other kind of office-premium, but also politicians that are purely policy motivated can have an incentive to win the next election and in order to get a chance to implement a policy more in line with their own view than what the opponent would have done.

⁶ One commonly used model that fits into this framework is the citizen-candidate model developed by Besley & Coate (1997) and Osborne & Slivinsky (1996).

⁷ This is the same mechanism that restrains politicians to behave opportunistic and collect too much rents, see, e.g., section 4.4 on electoral accountability in Persson & Tabellini (2000).

consideration and adjust the implemented policy accordingly. In this case, a prerequisite for voters' preferences to be implemented is that politicians are aware of these. This is the second topic that will be examined in this paper.

One crucial factor in both of these two types of models is the two groups' awareness of each others preferences: In order for voters to be able to elect politicians with the same preferences as themselves, they need to be aware of politicians' preferences. In order for politicians to be able to implement the policies preferred by the voters they need to be aware of voters' preferences. We argue that it is likely that this awareness is better in small jurisdictions (i.e. jurisdictions with few inhabitants), since the likelihood of interactions between voters and politicians are much larger in these jurisdictions. Hence, regardless whether politicians implement their own preferred policy or the one preferred by the voters, preference matching will be better in small jurisdictions. In this paper we will hence, as an indirect way of testing whether preference matching is better in small jurisdictions, empirically test, first, whether politicians' preferences are more in line with voters' preferences in small jurisdictions, and, second, whether politicians are more aware of voters' preferences in small jurisdictions.⁸ We will do this using survey data from Swedish municipalities.⁹ In the survey data, both elected politicians and their voters are asked about their preferences for locally provided goods. In addition, politicians are asked about what they believe about voters' preferences. We can hence investigate both of the two questions that we are interested in.

There are several advantages with studying Swedish local governments. In Sweden, the municipalities are responsible for supplying important welfare services such as schooling and elderly care, services that are likely to engage voters. Furthermore, the municipalities work under similar conditions, as opposed to countries in a cross-country analysis. In the main analysis we will use data from the 1966-election. In that period there existed many really small municipalities in Sweden, something that was changed by a major municipal amalgamation reform finished in 1974; in 1966 the average municipal population was 7,800, in 2005 it is 31,000.

⁸ That these questions are relevant to investigate when studying preference matching is supported by recent empirical evidence: Ågren (2004) shows that both voters' and politicians' preferences matter for implemented policy, and Levitt (1966), Lee, Moretti & Butler (2004), Chattopadhyay & Duflo (2004), Pande (2003), Pettersson-Lidbom (2003) show that politicians' identity (and preferences) matter for the implemented policy.

⁹ There are two levels of local governments in Sweden, counties and municipalities. In this paper we focus on the municipalities.

The rest of the paper will be organized in the following way: The next section discusses the Swedish institutional framework as well as the data used in the paper. Section 3 presents the empirical results and section 4 concludes.

2. Institutional background and data

The local public sector plays a dominant role in the Swedish economy and there is a long tradition of strong and autonomous local governments. The degree of autonomy refers both to the right to decide on the provision of local public services (above certain minimum standards) and to the right to set the local tax rate. The Swedish municipalities are responsible for supplying many important welfare services such as schooling¹⁰, social care and day care. The degree to which citizens depend on municipal services contributes to the importance of local authorities. The municipalities are lead by municipal councils elected in local elections, with a proportional election system. Sweden is a multi-party system where the same parties to a large extent appear at both the local level and the central level. There are, however, also some local parties. Even though Sweden is a multi-party system, it is standard among economists and political scientists to treat Sweden as a bipartisan system (see, e.g., Alesina, Roubini & Cohen, 1997) where the parties can be divided into a left-wing and a right-wing bloc.

There are some differences in the role that local elections play in small and large municipalities, as well as in the way the communication between voters and elected representatives works that give us reasons to believe that we might find different results for municipalities of different size. For example, Gustafsson (1988) argues that elections have an entirely different character in large municipalities than in small (where a small municipality is defined as having less than 8,000 inhabitants), since small municipalities lack the minimum of resources in terms of personnel and finance necessary to organize electoral campaigns. This could mean that voters know less about the politicians in small municipalities than in large. On the other hand, in small municipalities the communication between voters and politicians is more direct and do not take place via parties and other organizations which is the case in larger municipalities.

¹⁰ During the studied period, schooling constituted the largest budget share in all municipalities.

At the end of the 1960's there existed 995 municipalities in Sweden with an average size of 7,800 inhabitants. Many of these were very small (in fact many were considered to be too small from an efficiency point of view). By 1974 the number of municipalities had been cut to 278 through a large amalgamation of municipalities with the goal of ending up with no municipality having fewer than 8,000 inhabitants. The fact that there existed so many small municipalities before the amalgamation of municipalities gives us an opportunity to study whether there is a better correspondence between voters' and politicians' preferences in small municipalities and whether politicians are better informed of voters' preferences in small municipalities. We will hence in this paper focus on data collected in connection with the local election held in 1966.¹¹

The survey data used in this paper is taken from two different surveys, one directed to local citizens and one directed to elected local politicians, where the voters have been questioned before the election and the elected representatives after the election.^{12 13} The surveys were conducted in 36 Swedish municipalities.¹⁴ These municipalities were chosen so as to represent six different types of municipalities with respect to population and population density.¹⁵ In each municipality approximately 60 individuals were randomly drawn and personally interviewed during September.¹⁶ The reply-frequency varied between 77 and 97 percent (with an average of 87 percent). In November two years later (in 1968) all elected representatives in these 36 municipalities received a survey questionnaire with the same type of questions that the voters had received.¹⁷ The reply-frequency was on average 92 percent (it varied between 74 and 100 percent). In the surveys, both voters and local politicians were asked about their preferences for locally provided services. In addition, politicians were asked about their belief

¹¹ As a sensitivity analysis we will also use data from the 1991 election, see section 3.

¹² The fact that the surveys to voters and their elected representatives were conducted at different points in time will be dealt with in the empirical analysis (see section 3.1).

¹³ The principal investigators are Jörgen Westerståhl (voter-survey) and Lars Strömberg (politician-survey), both at the Department of Political Science, Göteborg University. Data is handled and distributed by the Swedish Social Science Data Services (SSD) in Göteborg. For more information see studies SSD 0110 and SSD 0111 at <http://www.ssd.gu.se/home.html>. Neither SSD, nor the principal investigators are responsible for the analysis and the conclusions reached in this paper.

¹⁴ In the empirical analysis we exclude two municipalities, first Ösmo due to lack of data, and Sveg köping due to a large change in number of inhabitants between 1966 and 1968. In addition, to the 36 municipalities, some larger cities were analyzed of which Göteborg is included in both surveys. However, we have chosen to exclude Göteborg as well since this municipality handles activities usually handled by the counties. Taken together, this leaves us with 34 municipalities.

¹⁵ For a more thorough description, see the appendix in Birgersson *et al.* (1971).

¹⁶ The local elections were held in September. 1966 was the last year when there were separate election years for the local and the central elections.

¹⁷ For the questions that we use in this paper, the voters and the politicians received identically worded questions.

about their voters' preferences. More specifically, we make use of the following two survey questions, the first answered by both voters and politicians and the second by politicians only:

Q1 *Municipal efforts typically have effects on the local taxes. Which of the following statements do you think is most appropriate for your municipality?*

- 1) *There are so many things that need to be done in this municipality so the efforts ought to be increased even if this means that one has to increase the local taxes.*
- 2) *The local taxes are, in large, correct given the need of municipal efforts.*
- 3) *It ought to be possible to decrease spending, so that the local tax can be decreased as well.*
- 4) *Efforts can be improved without having to raise taxes.*
- 5) *Do not know/Do not want to answer*

Q2 *Municipal efforts typically have effects on the local tax. What opinion do you think that most of your party's voters have?*

- 1) *There are so many things that need to be done in this municipality so the efforts ought to be increased even if this means that one has to increase the local tax.*
- 2) *The local tax is, in large, correct given the need for municipal efforts.*
- 3) *It ought to be possible to decrease spending, so that the local tax can be decreased as well.*
- 4) *Efforts can be improved without having to raise the local tax.*
- 5) *Do not know/Do not want to answer*

We will concentrate on the three first alternatives and interpret (1) as preferences for increased local expenditures, (2) as being satisfied with the current expenditure level and (3) as preferences for lower local expenditures.¹⁸ A major advantage with the formulation of the questions is that it directly considers willingness to pay; the respondent is asked to evaluate an increase/decrease in local public expenditures given a corresponding increase/decrease in taxes. An implicit assumption in our analysis is hence that no money is wasted (or captured by politicians in rents). *Table 1* displays the voters' and the politicians' responses on the two questions Q1 and Q2. We see that politicians to a larger extent than voters want an increase in local expenditures (or, equivalently, an increase in local tax rates); while 37 percent of the politicians want an increase, only 21 percent of the voters want that. Regarding question Q2, it turns out that the politicians' responses on what they think about the voters' preferences are more in line with the responses given by the voters themselves (c f the first and last columns)

¹⁸ It would be very interesting to analyze alternative (4), since this gives an indication about the respondents' view on municipal efficiency. However, only 10 voters and 12 politicians responded with this alternative. We have therefore chosen to exclude individuals that has given this answer (as well as individuals that do not know or do not want to answer).

than with the politicians' responses about their own preferences (c f the second and last columns). It can also be noted that there is no tendency for voters to support status quo more than the politicians, which we might be afraid of if voters lack information and therefore choose to answer that the current level is satisfying. *Table 2* lists the number of respondents in each municipality, as well as the population in 1966 in these municipalities. From the municipality codes we see that the small municipalities are situated all over Sweden.¹⁹ There is hence no reason to worry that the small municipalities are only situated in a specific geographical area (in, for example, the north of Sweden). Also, investigating the political majority in the municipal council in the municipalities in the survey, we do not see any clear patterns (for example, there is no indication that small municipalities typically have a left-wing majority).

The survey data is combined with municipal level register data on municipal current expenditures, municipal tax base and grants from the central government. Summary statistics for these variables are given in *Table 3* below. As we can see from the table, there is considerable variation in all three variables. *Tables 4* and *5* show how these municipal background characteristics as well as municipal population correlates with the answers given by voters and politicians on questions Q1 and Q2. Interesting to note is that the answer given to Q1 correlates with different signs with the municipal variables (except for grants) for voters and politicians.

Table 1. Percent of voters' and politicians' responses on questions Q1 and Q2.

	Voters (Q1)	Politicians (Q1)	Politicians about voters (Q2)
Decrease local expenditures	26.8	9.8	19.7
Satisfied with current expenditures	51.7	52.0	57.0
Increase local expenditures	21.5	38.2	23.3

¹⁹ Sweden was in 1966 divided into 25 counties. The first (in three-digit codes) or two (in four-digit codes) figures in the code are identifiers for each county.

Table 2. The municipalities included in the sample, their population, and the number of voters and politicians responding the survey.

Municipality	Code	Population 1966	# voters responding	# politicians responding
Ramsjö	2124	1,224	50	20
Fliseryd	822	1,783	56	24
Ätran	1320	2,106	54	30
Mörsil	2319	2,492	51	35
Stora Mellösa	1806	2,512	55	35
Bodafors	664	2,594	56	25
Härslöv	1212	2,960	49	30
Höör	1267	3,786	49	25
Karlsborg	1637	4,078	52	30
Mellösa	422	4,117	53	21
Skurup	1264	4,661	53	25
Hultsfred	860	4,767	57	25
Åsele	2463	4,930	55	30
Bygdeå	2409	5,463	58	30
Visnum	1701	5,490	53	40
Torshälla	485	7,247	54	25
Överkalix	2513	7,518	50	30
Strängnäs	486	9,093	53	30
Skara	1682	9,942	46	30
Nybro	881	10,355	53	30
Mjölby	586	12,290	48	34
Mora Köping	2062	13,121	51	40
Ängelholm	1182	13,845	51	35
Värnamo	683	15,176	52	40
Arvika	1784	15,983	53	40
Alingsås	1582	19,281	46	39
Köping	1983	20,041	56	40
Sandviken	2181	23,907	51	35
Karlskrona	1080	31,688	49	50
Uddevala	1485	36,376	50	40
Gävle	2180	59,982	56	45
Borås	1583	69,528	50	54
Hälsingborg	1283	78,769	53	51
Uppsala	380	86,859	50	60
Total		593,964	1,773	1,173

Table 3. Summary statistics, municipal data, 1966 and 1968.

Variable	Mean	Std dev	Min	Max
Expenditures	1,862.53	708.21	804.73	4,187.98
Tax base	70.31	12.25	42.23	95.46
Grants	619.93	326.99	61.80	1,909.28

Notes: Expenditures and grants are given in SEK/capita, 1966 years prices, and tax base in 100 SEK/capita, 1966 years prices.

Table 4. Correlation between variables, voters

	Q1	Population	Expenditures	Tax base	Grants
Q1	1.00				
Population	-0.09	1.00			
Expenditures	-1.00	0.38	1.00		
Tax base	-0.08	0.64	0.26	1.00	
Grants	-0.02	-0.14	0.12	-0.60	1.00

Table 5. Correlation between variables, politicians

	Q1	Q2	Population	Expenditures	Tax base	Grants
Q1	1.00					
Q2	0.65	1.00				
Population	0.05	-0.05	1.00			
Expenditures	0.02	-0.05	0.34	1.00		
Tax base	0.05	-0.06	0.71	0.36	1.00	
Grants	-0.03	-0.03	-0.01	0.43	-0.26	1.00

3. Empirical analysis

3.1 Estimation method

Since the dependent variable is ordinal and categorical²⁰, the traditional way would be to use an ordered logit model along the lines of Bergstrom, Rubinfeld & Shapiro (1982).²¹ However, since it is hard to evaluate the economic significance when using ordered logit estimation, we will use a linear approximation (running ordinary least squares) and only present the ordered logit results in the Appendix.²² In the estimations we control for municipal expenditures, municipal tax base and grants from the central government.²³ This is important to do since voters and politicians live in different municipalities and are observed in different years and since these variables have both within- and between-variation. For example, expenditures are typically higher in 1968 than in 1966. If we do not control for this, the answers given by voters and politicians will not be comparable. In order to investigate whether politicians have different preferences than voters and whether politicians have different beliefs about voters' preferences than what the voters' preferences actually are, we will include a dummy variable indicating whether the respondent is a politician or not. In order to investigate whether

²⁰ 1 = decreased taxes, 2 = same taxes, 3 = increased taxes

²¹ For an interpretation of the ordered logit model in a measurement error framework, see Dahlberg, Mörk & Ågren (2004).

²² The qualitative results are quite insensitive to the choice of estimation method.

²³ Instead of controlling for municipal expenditures we could have controlled for municipal tax rate, since the question that the respondents meet considers local taxes as well as local expenditures. All the results remain the same if we use taxes instead of expenditures.

municipal size matters for these differences, we will interact the politician dummy with dummy variables for different municipal sizes. These size-dummies will also be included as own regressors, since we want to be sure that any effect captured by the interaction dummy is not due to that municipal size matter for peoples' preferences.²⁴

3.2 Baseline results

In this paper we want to study the importance of municipal size on two different questions: i) do voters elect politicians with the same preferences as they have themselves? and ii) are politicians aware of their voters' preferences. The answers to these questions will be crucial in determining whether voters' preferences will be implemented or not. The results are presented in *Table 6* (voters' and politicians' preferences for local services) and *Table 7* (politicians' awareness of voters' preferences for local services). In the first column, we start with including a single dummy for whether the respondent is a politician or not ("Politician") in order to investigate whether local politicians have different preferences/different views on voters' preferences than the voters. In column 2, we examine if these differences are smaller in small municipalities by dividing the sample into different groups depending on their size of the population (we use seven size groups, Pop1-Pop7, where Pop1 contains the smallest municipality and Pop7 the largest²⁵) and interact the politician dummy with each of the size dummies. We can then compare the different interactions. A potential problem when dividing a sample with relatively few municipalities into many groups is that there are rather few municipalities in each group, which might make identification for some of the coefficients hard. Therefore, in the last column, we use a model with only three size groups.

Voters' and politicians' preferences for local services

Starting with the question whether local politicians have the same preferences as their voters for local services, it is clear from the first column in *Table 6* that they do not; politicians want significantly higher taxes and spending than their voters. This is in line with the results found in Dahlberg, Mörk & Ågren (2004) who study voters' and local politicians' preferences for schooling, child care and social care. The question of main interest in this paper is however whether this is a general phenomenon or whether it is a function of the size of the political jurisdiction. This is investigated in the second column. We find that the match between

²⁴ If we, in addition, want to control for municipal specific fixed effects we get a multicollinearity problem, since the fixed effects will be correlated with the size-dummies.

²⁵ For the exact size definitions of the different groups, see *Table 6*.

voters' and politicians' preferences gets better the smaller the jurisdiction is. We get the best match in the smallest municipality; the point estimate is the lowest for all groups (0.103) and it is not statistically significant. For the other size groups, the difference between voters' and politicians' preferences are more pronounced, both in terms of point estimates and in terms of significance levels (for the two largest size groups, the point estimates are 5-6 times larger than the point estimate for the smallest size group and the t-statistics are much higher).

But perhaps seven groups are too much in a dataset with 34 municipalities. We have therefore aggregated the two smallest size groups in column (2) into "small municipalities", the next three size groups into "medium sized municipalities", and the last two groups into "large municipalities".²⁶ The results, which are given in the last column, show a similar picture as the results in the middle column; there is a much better correspondence between voters' and politicians' preferences in small municipalities than in large. It can however be noted that there is a significant difference between voters and politicians also in the smallest municipalities.

Hence, the results indicate that the match between voters' and politicians' preferences for local public spending is better in small political jurisdictions but that they need to be fairly small in order to get a close correspondence.²⁷ Given that politicians implement their own preferred policy our results indicate that only in fairly small municipalities will the implemented policy be in line with voters' preferences.

Are politicians aware of the voters' preferences?

Next, we turn to the question whether the politicians are aware of their voters' preferences and whether municipal size matters for this. From the results in the first column in *Table 7*, we note that politicians think that their voters want significantly higher local public spending than they really do (the coefficient for the politician dummy is positive and statistically significant).²⁸ The question we want to answer is then whether politicians are more aware of

²⁶ Looking at the point estimates in *Table 6*, this division seems sensible.

²⁷ One might worry that this result depends on a higher turnout rate in small municipalities. In the survey data we can observe whether the individual voted or not. Repeating the analysis in section 3.2 using only the respondents that voted in the 1966-election we find very similar results. Hence, the results do not seem to be driven by any differences in election turnout.

²⁸ Furthermore, comparing the parameter estimate on the political dummy in *Table 7* with the corresponding estimate in *Table 6* we see that the estimate is smaller in *Table 7* than in *Table 6*. This indicates that politicians are aware of that voters prefer less local public spending than themselves. These results are in line with the descriptive statistics presented in *Table 1*.

voters' preferences in small municipalities than in large. From the results in the last two columns, we see that in really small jurisdictions (with a population less than 4,200), there is no differences between what politicians think that their voters' preferences are for local services and what the voters' preferences really are. For jurisdictions with a population above approximately 5,000, on the other hand, there is a significant difference in what politicians think about their voters' preferences for taxes and expenditures, and what the voters' preferences really are. It also turns out that the parameter estimates are very similar for this group of jurisdictions; no matter if it is a jurisdiction of 5,000 inhabitants, 10,000 inhabitants or more than 38,000 inhabitants (the parameter estimates are typically around 0.20-0.25).

Hence the results in this sub-section indicates that even if politicians want to implement the voters' preferred policy, it is only in the smallest municipalities that this will succeed, since they are not aware of the voters' preferences in the other municipalities.

To sum up the baseline estimates, it seems like it is only in really small municipalities that there is a close correspondence between voters' and politicians' preferences and between voters' preferences and the politicians' beliefs about the voters' preferences. Regardless of if politicians implement their own preferred policy or the one preferred by the voters, voters' preferences will hence have a better chance of turning into policy outcome in small municipalities than in large. These results strengthen the preference-matching argument behind smaller political jurisdictions.

Table 6. Voters' and politicians' preferences for local tax rates. Ordinary least squares.

	(1)	(2)	(3)
Expenditures	-0.000 (-0.57)	-0.000 (-1.14)	-0.000 (-1.21)
Grants	-0.000 (-1.70)*	-0.000 (2.13)**	-0.000 (-2.13)**
Tax base	-0.002 (-1.72) *	-0.007 (-3.00)***	-0.005 (-2.48)**
Politician	0.367 (11.40)		
Pop1: Pop <2,600		2.577 (16.32)***	
Pop2: 2,600< Pop <4,200		2.678 (15.39)***	
Pop3: 4,200< Pop <5,500		2.478 (14.32)***	
Pop 4: 5,500< Pop <11,000		2.563 (13.74)***	
Pop 5: 11,000< Pop <16,000		2.498 (13.60)***	
Pop 6: 16,000< Pop <38,000		2.556 (12.99)***	
Pop 7: Pop >38,000		2.518 (11.92)***	
Politician×Pop1		0.103 (1.53)	
Politician×Pop2		0.191 (2.15)**	
Politician×Pop3		0.421 (5.54)***	
Politician×Pop4		0.404 (5.16)***	
Politician×Pop5		0.467 (6.56)***	
Politician×Pop6		0.613 (8.57)***	
Politician×Pop7		0.572 (7.71)***	
Popsmall: Pop <4,200			2.489 (17.74)***
Popmed: 4,200<Pop<16,000			2.379 (15.24)***
Poplarge: Pop>16,000			2.378 (13.67)***
Politician×Popsmall			0.128 (2.39)**
Politician×Popmed			0.422 (8.95)***
Politician×Poplarge			0.574 (10.67)***
Constant	2.190 (21.18)***		
Observations	2,599	2,599	2,599
R-squared	0.06	0.91	0.91

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 7. Politicians' awareness of voters' preferences. Ordinary least squares.

	(1)	(2)	(3)
Expenditures	-0.000 (-1.08)	-0.000 (-2.00)**	-0.000 (-1.59)
Grants	-0.000 (2.47)**	-0.000 (-1.99)*	-0.000 (-1.83)*
Tax base	-0.005 (3.74)***	-0.006 (-2.43)**	-0.005 (-2.56)**
Politician	0.153 (4.71)***		
Pop1: Pop <2,600		2.524 (15.77)***	
Pop2: 2,600 < Pop <4,200		2.613 (14.81)***	
Pop3: 4,200 < Pop <5,500		2.417 (13.78)***	
Pop 4: 5,500 < Pop <11,000		2.502 (13.23)***	
Pop 5: 11,000 < Pop <16,000		2.433 (13.07)***	
Pop 6: 16,000 < Pop <38,000		2.489 (12.47)***	
Pop 7: Pop >38,000		2.451 (11.44)***	
Politician×Pop1		0.015 (0.21)	
Politician×Pop2		-0.033 (-0.36)	
Politician×Pop3		0.264 (3.43)***	
Politician×Pop4		0.293 (3.69)***	
Politician×Pop5		0.183 (2.53)**	
Politician×Pop6		0.215 (2.95)***	
Politician×Pop7		0.262 (3.48)***	
Popsmall: Pop <4,200			2.510 (17.67)***
Popmed: 4,200 < Pop <16,000			2.399 (15.18)***
Poplarge: Pop >16,000			2.408 (13.67)***
Politician×Popsmall			-0.011 (0.20)
Politician×Popmed			0.223 (4.69)***
Politician×Poplarge			0.222 (4.06)***
Constant	2.433 (23.33)***		
Observations	2,598	2,598	2,598
R-squared	0.01	0.90	0.90

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

3.3 Sensitivity analysis

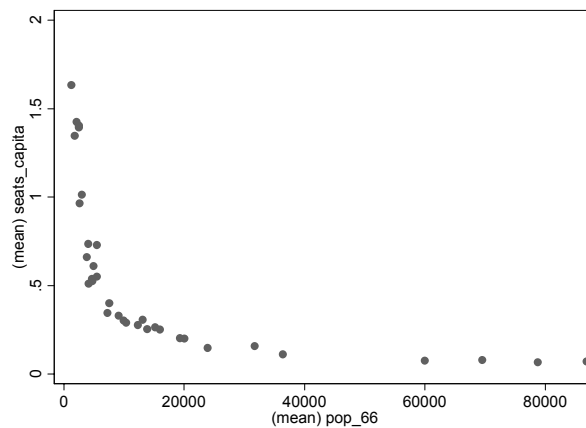
In order to check the robustness of our baseline estimates we will conduct three types of sensitivity analyses. First, we will examine how sensitive the results are to an alternative indicator of the likelihood of interaction between voters and politicians, namely the number of elected representatives per capita in the municipal council. Second, we will examine how sensitive the results are to a disaggregation of the local budget by investigating voters' and politicians' preferences for local spending on schools and social care. Finally, we will examine what happens with the results if we use data from a point in time when really small municipalities no longer existed (from the early 1990s, which is a point after the amalgamation reform in 1974).

Representatives per capita in municipal council

In the introduction we argued that voters and politicians are more likely to be aware of each others preferences in small municipalities since the likelihood of interactions between the two groups is larger there. It is however possible that the size of the population in a political jurisdiction is not the best measure of the likelihood of interactions. An alternative measure could be the number of representatives per capita in the municipal council; the more seats per capita in the municipal council, the higher is the probability that the voters and the politicians are aware of each others preferences for local goods and services.²⁹ In this section we will divide the municipalities into different groups according to this measure rather than municipal size. We expect that the difference between voters and politicians will be smaller in municipalities with many representatives per capita. It is worth mentioning that the two measures, population and number of representatives per capita, are correlated (see *Figure 1*). However, the correlation is far from one, and especially for the small municipalities the number of representatives per capita seems to differ considerably.

²⁹ In the extreme situation, there will be one representative per voter which of course would mean that everyone is represented and there will be no differences between either voters' and politicians' preferences or between voters' preferences and politicians' beliefs about these preferences.

Figure 1. Population and number of representatives per 100 capita



We divide the sample into three groups (columns (1) and (3)) or four groups (columns (2) and (4)) depending on how many representatives there are per 100 capita and interact these groups with a dummy indicating if the respondent is a politician.³⁰ The results are presented in *Table 8*. In columns (1) and (2), we examine the correspondence between voters' and politicians' preferences. In columns (3) and (4), we examine the correspondence between the voters' preferences and the politicians' beliefs (awareness) about these preferences. The results show that the more seats there are per capita in the municipal council, the better is the match between voters' and politicians' preferences (c f the first two columns) and the better is the politicians awareness about the voters' preferences (c f the last two columns). These results are hence well in line with the baseline analysis and strengthens our findings that it is in municipalities where the likelihood of interactions between voters and politicians is large that voters' preferences stand the best chance of being implemented.

³⁰ When we divide the sample into three groups, these are given by Few (number of representatives per 100 capita < 0.26), Middle (number of representatives per 100 capita < 0.54) and Many (number of representatives per 100 capita > 0.54), and when we divide the sample into four groups, these are given by Few4 (number of representatives per 100 capita < 0.46), Middle4 (0.46 < number of representatives per 100 capita < 0.85), Many4 (0.85 < number of representatives per 100 capita < 1.24) and Very many4 (number of representatives per 100 capita > 1.24).

Table 8. Number of representatives per capita in municipal council. Ordinary least squares.

	(1)	(2)	(3)	(4)
	Preferences	Preferences	Awareness	Awareness
Expenditures	-0.000 (-1.09)	-0.000 (-1.65)*	-0.000 (-1.47)	-0.000 (-1.47)
Grants	-0.000 (-2.42)**	-0.000 (-2.55)**	-0.000 (-2.10)**	-0.000 (-2.70)**
Tax base	-0.004 (-1.98)**	-0.005 (-2.59)***	-0.004 (-1.92)*	-0.006 (-3.39)***
Few	2.288 (13.05)***		2.293 (12.93)***	
Middle	2.347 (14.83)***		2.348 (14.68)***	
Many	2.414 (16.76)***		2.412 (16.57)***	
Politician×Few	0.554 (10.98)***		0.213 (4.16)***	
Politician×Middle	0.420 (7.57)***		0.219 (3.90)***	
Politician×Many	0.170 (3.49)***		0.032 (0.65)	
Few4		2.406 (15.66)***		2.518 (16.17)***
Middle4		2.447 (17.61)***		2.544 (18.05)***
Many4		2.502 (17.03)***		2.601 (17.46)***
Very many4		2.471 (18.67)***		2.557 (19.06)***
Politician×Few4		0.515 (12.21)***		0.226 (5.27)***
Politician×Middle4		0.364 (5.74)***		0.146 (2.28)**
Politician×Many4		0.088 (0.75)		0.015 (0.13)
Politician×Very many4		0.090 (1.23)		0.006 (0.09)
Observations	2,599	2,599	2,598	2,598
R-squared	0.91	0.91	0.90	0.90

Robust t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Different types of expenditures

One potential problem in looking at preferences for local tax rates is that it is a measure of the preferences for the whole local budget, regardless of what the money are used for. It might be the case that voters and politicians have the same preferences for most of the locally provided services (and perhaps for the most important ones, as measured by their share of the budget) but disagree on some. To examine if our results are sensitive to the type of services produced, we will in this section investigate if we find the same pattern as above when looking at preferences for two different services: schooling (which constituted 15-45 percent of total expenditures in the 1960s) and social care (which constitutes 0.5-10 percent of total expenditures). We are only able to investigate the first of our two topics, whether voters and politicians have the same preferences, since we do not have data on politicians' beliefs about voters' preferences on different service types.

The results, presented in *Table 9*, show that politicians want significantly more spending on both schooling and social care than the voters. This is however only true for large municipalities; for small municipalities, there is a much better match of preferences, as indicated by the point estimates, and there are typically no statistically significant differences between voters and politicians. Also these results are well in line with the baseline analysis.

Table 9. Preferences for local services. Ordinary least squares.

	(1) Schooling	(2) Social care
Expenditures – schooling	-0.000 (-3.26)***	
Grants – schooling	0.000 (0.26)	
Expenditures – social care		-0.002 (-3.64)***
Grants – social care		0.003 (1.56)
Tax base	0.003 (1.74)*	-0.004 (-2.01)**
Pop1: Pop <2,600	2.063 (16.88)***	2.230 (19.13)***
Pop2: 2,600< Pop <4,200	2.083 (14.32)***	2.270 (16.05)***
Pop3: 4,200< Pop <5,500	2.074 (15.51)***	2.135 (18.38)***
Pop 4: 5,500< Pop <11,000	2.076 (14.47)***	2.126 (15.83)***
Pop 5: 11,000< Pop <16,000	2.052 (14.56)***	2.006 (14.26)***
Pop 6: 16,000< Pop <38,000	2.149 (14.19)***	1.949 (12.87)***
Pop 7: Pop >38,000	2.008 (12.35)***	2.092 (12.73)***
Politician×Pop1	-0.086 (-1.39)	0.001 (0.01)
Politician×Pop2	-0.040 (-0.50)	0.033 (0.37)
Politician×Pop3	0.214 (3.20)***	0.094 (1.15)
Politician×Pop4	0.257 (3.65)***	0.201 (2.59)***
Politician×Pop5	0.312 (4.65)***	0.224 (2.99)***
Politician×Pop6	0.265 (3.99)***	0.358 (4.79)***
Politician×Pop7	0.208 (3.03)***	0.321 (4.44)***
Observations	2,665	2,230
R-squared	0.92	0.90

Robust t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Data from 1991/1993

Finally, we will examine how sensitive the results are to the use of data from a point in time when really small municipalities no longer existed.³¹ For this year we can only compare voters' and politicians' preferences, but not voters' preferences and politicians' awareness of these, since the surveys do not contain this question.³² We use two different size definitions.³³ In the first column in *Table 10*, we divide the sample into three size groups, where there is an equal number of municipalities in each group; small municipalities are defined as having less than 16,000 inhabitants, medium sized municipalities are defined as having more than 16,000 but less than 35,000 inhabitants, and large municipalities are defined as having more than 35,000 inhabitants. In the second column, we divide the sample into two size groups, where small municipalities are defined as having less than 12,000 inhabitants (there are five municipalities that fall into this group) and large municipalities are defined as having more than 12,000 inhabitants.

From the results it is clear that politicians typically want significantly higher taxes and significantly more spending than the voters (c f the coefficients on the interaction terms). In contrast to the results on the data from the 1960s, voters and politicians are however typically not closer to each other in small jurisdictions. These results hence indicate that the "smallness" of a political jurisdiction should perhaps best be understood in an absolute rather than a relative sense.

³¹ Data from the 1991-election is the most recent survey data on both politicians and voters that we have access to. The voter data is collected in 1991 and the politician data two years later, in 1993. The principal investigators of the surveys are Folke Johansson (voter-survey in 1991) and Henry Bäck (politician-survey in 1993), all at the Department of Political Science, Göteborg University. The data is handled and distributed by SSD. For more information see studies SSD 0306 and SSD 0482 at the internet. Neither SSD nor the principal investigators are responsible for the analysis and the conclusions reached in this paper

³² Also, the formulation of the question about voters' and politicians' preferences is slightly different from the formulation in the 1966/1968 surveys. In the 1991/1993 survey respondents are asked to state whether they agree completely, agree on the whole, disagree on the whole, disagree strongly or have no opinion/do not know to the statement "It is more urgent to lower the tax rate than to raise the level of local services".

³³ We cannot use the same size groups as for the 1966-data, since really small municipalities no longer exist. Also, in the 1991/1993 data there are only 28 municipalities, making it hard to divide the sample into so many size groups. The number of voters interviewed in each municipality is however higher than in the 1966-survey (150 citizens in each municipality).

Table 10. Preferences for local services, 1991/1993 data. Linear probability model.

	(1)	(2)
Tax rate	-0.010 (-2.42)**	-0.009 (-2.43)**
Grants	0.000 (1.97)**	0.000 (2.02)**
Tax base	-0.000 (-0.82)	-0.000 (-0.94)
Small: pop<16,000	2.827 (13.30)***	
Medium: 16,000<pop<35,000	2.905 (14.08)***	
Large: pop>35,000	2.933 (712.77)***	
Politician×small	0.386 (5.10)***	
Politician×medium	0.425 (6.27)***	
Politician×large	0.289 (5.53)***	
Small2: pop<12,000		2.775 (16.04)***
Large2: pop>12,000		2.907 (15.87)***
Politician×small2		0.418 (4.07)***
Politician×large2		0.336 (8.55)***
Observations	4,606	4,606
R-squared	0.88	0.88

Robust t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

4. Conclusions

In this paper we have analyzed whether the correspondence between voters' and politicians' preferences is better in small municipalities than in large, and whether politicians' are better aware of voters' preferences in small municipalities. This gives us an answer to the question whether preference matching is better in small local governments than in large since we test the prerequisites for voters' preferences being implemented.

We find that the match between voters' and politicians' preferences for local public spending is better in small political jurisdictions and that local politicians have better knowledge about their voters' preferences in small jurisdictions. However, the jurisdictions must have less than approximately 5,000 inhabitants in order for the correspondence to be good. Our results hence

indicate that regardless of whether politicians implement their own preferred policy or the one preferred by the voters, it is only in fairly small political jurisdictions that voters' most preferred policy will be implemented.

In determining the size of political jurisdictions, it is generally considered to be a trade off between the economic and the democratic arguments; while the economic arguments (economics of scale and the existence of externalities) point towards large units, the democratic arguments (accountability and preference matching) speak in favor of small units. At first sight, our results also seem to strengthen the democratic argument for keeping down the size of political jurisdictions. However, in a sensitivity analysis where we used the number of representatives per capita in the municipal council as an alternative measure of the likelihood of interactions between voters and politicians, we found that the more seats there are per capita in the municipal council, the better is the match between voters' and politicians' preferences and the better is the politicians' awareness about the voters' preferences. These results indicate that even if we follow the economic arguments and create large jurisdictions, we can still uphold good preference matching by increasing the number of representatives per capita in the municipal council. Large cabinets may however have other effects as well, as shown in, e g, Pettersson-Lidbom (2003).

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Appendix

In this appendix we present the ordered logit results for the baseline models.

Table A1. Voters' and politicians' preferences for local tax rates. Ordered logit estimation.

	(1)	(2)	(3)
Expenditures	-0.000 (-0.46)	-0.000 (-1.06)	-0.000 (-1.16)
Grants	-0.000 (-1.44)	-0.000 (-2.03)**	-0.000 (-2.09)**
Tax base	-0.006 (-1.38)	-0.021 (-3.07)***	-0.014 (-2.48)**
Politician	1.016 (10.87)***		
Pop1: Pop <2,600		0.176 (0.72)	
Pop2: 2,600 < Pop <4,200		0.483 (2.01)**	
Pop3: 4,200 < Pop <5,500		-0.119 (-0.50)	
Pop 4: 5,500 < Pop <11,000		0.143 (0.67)	
Pop 5: 11,000 < Pop <16,000		-0.043 (-0.20)	
Pop 6: 16,000 < Pop <38,000		0.137 (0.68)	
Politician×Pop1		0.271 (1.44)	
Politician×Pop2		0.473 (2.93)*	
Politician×Pop3		1.197 (5.44)***	
Politician×Pop4		1.130 (4.99)***	
Politician×Pop5		1.380 (6.55)***	
Politician×Pop6		1.835 (8.64)***	
Politician×Pop7		1.715 (7.75)***	
Popsmall: Pop <4,200			0.326 (1.98)*
Popmed: 4,200 < Pop <16,000			0.006 (0.04)
Politician×Popsmall			0.326 (2.18)***
Politician×Popmed			1.208 (8.74)***
Politician×Poplarge			1.711 (10.65)***
Observations	2,599	2,599	2,599

Robust z statistics in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%

Table A2. Politicians' awareness of voters' preferences. Ordered logit estimation.

	(1)	(2)	(3)
Expenditures	-0.000 (-0.95)	-0.000 (-1.94)*	-0.000 (-1.53)
Grants	-0.000 (-2.43)**	-0.000 (-1.57)	-0.000 (-1.78)*
Tax base	-0.015 (-3.69)***	-0.016 (-2.41)**	-0.014 (-2.49)**
Politician	0.417 (4.57)***		
Pop1: Pop <2,600		0.236 (0.96)	
Pop2: 2,600 < Pop <4,200		0.495 (2.07)**	
Pop3: 4,200 < Pop <5,500		-0.083 (0.24)	
Pop 4: 5,500 < Pop <11,000		0.172 (0.81)	
Pop 5: 11,000 < Pop <16,000		-0.026 (-0.12)	
Pop 6: 16,000 < Pop <38,000		0.140 (0.70)	
Politician×Pop1		0.036 (0.19)	
Politician×Pop2		-0.092 (-0.38)	
Politician×Pop3		0.752 (3.44)***	
Politician×Pop4		0.829 (3.65)***	
Politician×Pop5		0.518 (2.45)**	
Politician×Pop6		0.607 (2.91)***	
Politician×Pop 7		0.764 (3.49)***	
Popsmall: Pop <4,200			0.308 (1.87)*
Popmed: 4,200 < Pop <16,000			-0.016 (-0.12)
Politician×Popsmall			-0.035 (-0.24)
Politician×Popmed			0.640 (4.66)***
Politician×Poplarge			0.633 (4.02)***
Observations	2,598	2,598	2,598

Robust z statistics in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%