

SVENSK ØKONOMISK NASJONALRAPPORT

Local government taxation: The case of Sweden*

Swedish national report to the 2004 NSFR meeting in Oslo

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1. Introduction

The focus of this report is on local government taxation in Sweden. The purpose is threefold. First, we aim at describing the workings of the local public sector in Sweden; the sector's responsibilities, its degree of local self-government, in particular its ability to raise its own revenues through taxation, and the tax equalizing system. These aspects will be discussed in sections 2-4.

Second, we aim at examining the determinants of local tax rates such as the role of economic and demographic factors and the role of political factors. Furthermore, we will discuss the influence of neighboring municipalities' as well as counties' tax rates (i.e., the existence of horizontal/tax competition and vertical strategic interactions/vertical fiscal externalities). In addition, using survey data, we will present voters' and politicians' opinions about local taxes. These questions will be discussed in sections 5-7. Note that little research has been conducted for Sweden on this topic by economists. Therefore, in addition to drawing on earlier research, we will base parts of the discussion in sections 5-7 on econometric analyses done for this report.

Third, we aim at drawing the readers' attention to some recently debated questions in Sweden; the consequences for the local tax system of an aging population, and the relationship between revenues and expenditures of the local governments. These questions will be discussed in section 8. Finally, section 9 provides a few concluding remarks and questions for the future.

2. The local public sector in Sweden

In Sweden there are two layers of local government, municipalities and counties. The 290 municipalities have an average size of approximately 31,000 inhabitants, ranging from approximately 2,600 to 755,000 inhabitants. The median municipality has approximately 15,000 inhabitants. The 21 counties have an average size of approximately 424,244 inhabitants, ranging from 57,412 to approximately 1.84 million inhabitants. The two layers of local government are not related in a hierarchical way; instead, they are charged with different functions. The municipalities constitute the largest and most important local sector and will, therefore, be the main focus of our attention in this report.

The local public sector plays a dominant role in the Swedish economy and there is a tradition of belief in strong local governments, a common feature of the Nordic countries. They are, for example, responsible for the provision of welfare services such as child care, education, care of the elderly, and social welfare services. The Swedish local governments employ approximately 20 percent of the total Swedish workforce and their share of GDP is 21 percent. Swedish local governments also have a large degree of autonomy. For example, they have the constitutional right of self-governance which, in practice, means that the local governments set their own tax rates and they are not limited by borrowing constraints. Since 2000, according to the law, the municipalities have to balance their budgets.

There have been a number of regulations and institutional changes during the 1990s that are quite likely to have affected the local tax rate. Here we will mention the more important ones.

- There have been a number of regulations during the 1990s aiming at counteracting increases in the local tax rate. During 1991-1993, a constitutional regulation, forbidding a rise in the local income tax, was implemented. In 1994, municipalities maintaining the level of taxation were compensated. In addition, during 1997-1999 there was a reduction in the grants a municipality received, punishing the municipality had it increased its tax rate.
- In the 1990s there was a reformation of the intergovernmental grants system. The major grant reform in 1993 meant that most targeted grants became general, thereby increasing the discretion of the local governments. Extensive adjustments to the 1993 grants reform were made in 1996.¹
- In 1992, there was a care for the elderly reform (ÄDEL reformen), in which some of the responsibilities for the care of the elderly were switched from the counties to the municipalities.
- In 1995, there was a psychiatric reform, in which some of the responsibilities for the care of the mentally ill were switched from the counties (and from the state) to the municipalities.
- In 2002, a maximum fee in the day care sector was introduced.

¹ For example, in 1996 a tax equalization system was introduced. We will return to fiscal equalization across local governments in a later section.

The effect of the above institutional changes and reforms are visible when examining the local tax rate over time; we will return to this issue in more detail in section 3.3.

3. Local government taxation

3.1 Why local tax discretion?

As discussed above, there is a large degree of local tax discretion in Sweden. What are the reasons for having decentralized tax setting? In this section we will briefly discuss the main economic arguments for and against decentralized decision making.²

The central arguments for decentralization of economic decision making are attributed to Musgrave (1959), Oates (1972) and Tiebout (1956). Musgrave (1959) argues that local governments should take care of the “allocation function”, i.e. to produce local public goods, while the central government should take care of the “distribution function” and the “stabilization function”. The most important underlying assumption refers to the ability of the local decision makers to match the preferences of the residents in the locality. As shown by Oates (1972), efficiency can be improved, compared to a centrally imposed standardized solution, when preferences are heterogeneous across different local governments, implying that it is desirable to have decentralized provision of local public goods. Also, in the Tiebout model, local governments act competitively, competing for mobile households, yielding a market-like competition that makes the local government provide efficient levels of public goods and services.

The main Musgrave-Oates-Tiebout argument for decentralized decision making is hence that it produces efficiency gains in the provision of local public services. But given that they should be responsible for the expenditure side, why should they also be responsible for the revenue side? As discussed by Borge, Carlsen and Rattsø (1999), the main reason for having local tax discretion is related to increased voter control and increased accountability; the local governments should be economically as well as politically responsible for their expenditure decisions. An unclear division of responsibilities between a local government and the central government will reduce control and efficiency. In addition, local tax discretion is important when it comes to the bailout problem; a high degree of financial autonomy for a local

² For a more detailed discussion about decentralized decision making in general, see Boadway and Mörk (2004). For a more detailed discussion about local tax discretion, see Borge, Carlsen and Rattsø (1999).

government is perhaps the best protection for a central government against bailouts. Local governments that spend the majority out of own taxes, and perhaps also enjoy autonomy to borrow, can reasonably be expected to make even stronger adjustments to local spending programs in case of a financial crisis. Thus, constraints on local governments' ability to raise own revenues can only weaken fiscal autonomy at the local level and reduce the central government's protection against bailouts.³

A related issue is that of tax competition. Tax competition can serve both as an argument for and an argument against decentralization. An argument in favor of decentralized tax setting is that competition for taxpayers among local governments is regarded as a check on rent-seeking behavior of selfish politicians and on excessive growth of government.⁴ Competition hence provides a disciplining effect and more voter control, as in models of yardstick competition. An argument against decentralized tax setting is if tax competition takes the form of strategic interactions among local governments in the setting of local tax rates, since such behavior may result in socially sub-optimal tax levels.

In the presence of tax competition, theory and empirical work show that we are quite likely to end up with local tax rates that are lower than what is socially optimal. However, in practice, as discussed by Borge, Carlsen and Rattsø (1999), tax limitations have been imposed in several countries at different points in time, mainly in fear of an upward drifting tax rate and a growing public sector.⁵ Voters and politicians hence seem to believe that there is a Leviathan government that has to be tamed (be it through budget maximizing bureaucrats or rent-seeking politicians) rather than correcting for strategic interactions among local governments resulting in too low tax rates.

3.2 Revenue sources

There are three main revenue sources for Swedish municipalities; own tax revenues (which comes solely from income taxation), intergovernmental grants, and fees. In Table 1, where the different revenue sources are presented as shares of total revenues, it is clear that tax revenues

³ For a discussion about the bailout problem, see, e.g., von Hagen and Dahlberg (2004).

⁴ This is an outflow of the "Leviathan" view of government (Brennan and Buchanan, 1977).

⁵ While limitations in local tax discretion were imposed by politicians at the central level in, for example, Denmark and Sweden during the 1990s, the famous property tax limitation in California in 1978 ("Proposition 13") was the outcome of a voter revolt.

constitute the major revenue source; from having had a share of 41 percent in 1981, it has increased its share to 53 percent in 1999. Note also, that over the last two decades, intergovernmental grants have had a rather constant share between 20 and 25 percent, while the share of fees have decreased from slightly less than 20 percent in the early 1980s to less than 10 percent in the late 1990s. Figure 1, shows the evolution of the three main revenue sources (expressed in per capita terms and in 1999 values) during the last two decades. Until the early 1990s, the three series have a fairly similar pattern. After

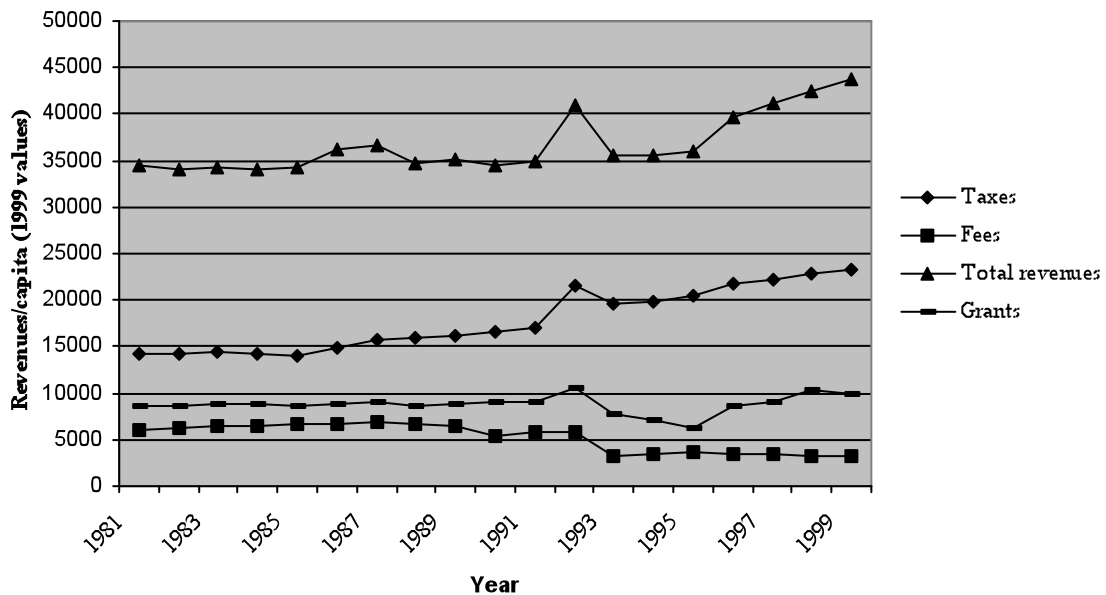
Table 1. Revenue sources as share of total revenues

Year	Taxes	Fees	Grants	Other
1981	0,41	0,17	0,25	0,16
1982	0,42	0,18	0,26	0,15
1983	0,42	0,19	0,26	0,14
1984	0,42	0,19	0,26	0,13
1985	0,41	0,20	0,25	0,14
1986	0,41	0,19	0,24	0,16
1987	0,43	0,19	0,25	0,14
1988	0,46	0,19	0,25	0,10
1989	0,46	0,18	0,25	0,11
1990	0,48	0,16	0,26	0,10
1991	0,49	0,17	0,26	0,08
1992	0,52	0,14	0,26	0,07
1993	0,55	0,09	0,22	0,14
1994	0,56	0,09	0,20	0,15
1995	0,57	0,10	0,17	0,16
1996	0,55	0,09	0,22	0,14
1997	0,54	0,08	0,22	0,16
1998	0,54	0,08	0,24	0,14
1999	0,53	0,08	0,22	0,17

Source: Statistical Yearbook

1991, there are however some differences; while total revenues and tax revenues mainly grow during the 1990s, grant revenues per capita steadily falls between 1992 and 1995 before it starts to increase during the second half of the 1990s. Fee income settles at a lower level during the 1990s than during the 1980s.

Figure 1. The evolution of municipal revenues, 1981-1999



Source: Statistical Yearbook

3.3 The local tax rate

The Swedish local governments have the constitutional right of self government. The degree of autonomy refers both to the right to decide on the provision of local public services and to the right to set the local tax rate. Taxes as the local public income source have a long tradition in Sweden. Up until the 1920s, the local taxes were mostly dependent on the property tax and were during a period a mix of income and property taxes. The large tax reform in 1991 led to an abolishment of the local property tax and today labor income constitutes the only tax base in Swedish municipalities. The local tax discretion is since 1974 set by the constitution.

This section aims at describing the local tax rate. We start by plotting the distribution for the municipal tax rate (c.f. Figure 2).⁶ According to Figure 2, an upward drift in the municipal tax rate can be detected. Is the trend attributed to a real tax drift, or can it be explained by institutional changes?⁷ As discussed above, a common argument for centrally imposed tax

⁶ The distribution of a variable is examined with the help of box-and-whisker plots. The line in the middle of the box represents the median of the data. The box itself constitutes the interquartile range (IQR), that is, it extends from the 25th percentile to the 75th percentile of the data. The lines emerging from the box are called the whiskers and they extend to the upper and lower adjacent values. The upper adjacent value is defined as the largest data point less than or equal to $(75^{\text{th}} \text{ percentile} + 1.5 \times \text{IQR})$ and the lower adjacent value is defined as the smallest data point greater than or equal to $(25^{\text{th}} \text{ percentile} - 1.5 \times \text{IQR})$. Observed points more extreme than the adjacent values are individually plotted. The disaggregated data is obtained from Statistics Sweden.

⁷ For example, an unpublished IMF report claims that the trend is due to a real tax drift.

limitations at the local level is to restrain a growth in local tax rates and a growing public sector.

As previously discussed, a number of institutional changes have taken place during the studied period that have had an affect on the local tax rate. First, the discrete upward jump in the municipal tax rates in 1992 is mainly due to the care for the elderly reform in that year (ÄDEL-reformen); the reform implied that the municipalities overtook the responsibility for parts of the care for the elderly that earlier had been the responsibility of the county councils. Before 1992, it is hard to see any trend in the municipal tax rate. Second, the discrete upward jumps in the municipal tax rates in 1995 and 1996 is mainly due to the psychiatric reform, in which some of the responsibilities for the care of the mentally ill were switched from the counties to the municipalities.⁸

The argument that the trend is mainly driven by institutional changes, and not by a real tax drift, is strengthened by the pattern in Figure 3, which shows the average tax rates over time separately for the municipalities, the counties, and the total local sector. The two lower time series illustrate the shift of responsibilities between the municipalities and the counties; the upward trend in the municipal tax rate is matched by a downward trend in the county tax rate. Concentrating on the average tax rate for the whole local public sector, it is far from clear that there is any tax drift present.

It might be interesting to note that if there is a tax drift in effect, it seems to be among those municipalities with the lowest tax rates (c.f. Figure 2); while some municipalities have tax rates that are much lower than the lowest adjacent value in the first twenty years, no municipality is far from the lowest adjacent value during the last years of the time series. As will be discussed later, this may be due to the incentive effects introduced in 1996 via the new tax equalizing system.

⁸ Remember that during 1991-1993, there was a constitutional regulation forbidding a rise in the local income tax; in 1994, municipalities maintaining the level of taxation were compensated; during 1997-1999, there was a reduction in the grants a municipality received, punishing the municipality had it increased its tax rate.

Figure 2. Distribution of municipal tax rates, 1983-2002.

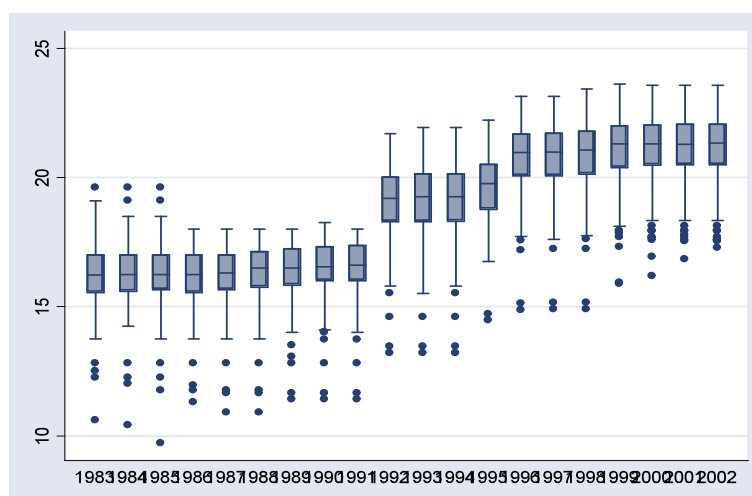
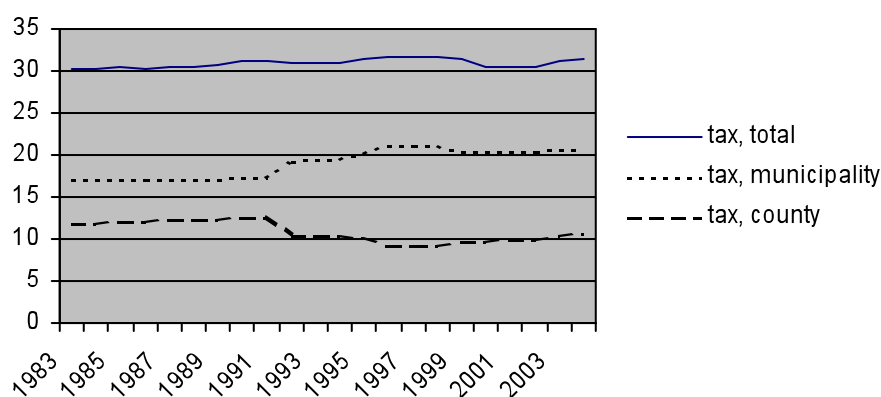


Figure 3. Average tax rates in the local sector 1983-2003.



4. The tax equalization system

4.1 Objectives and workings

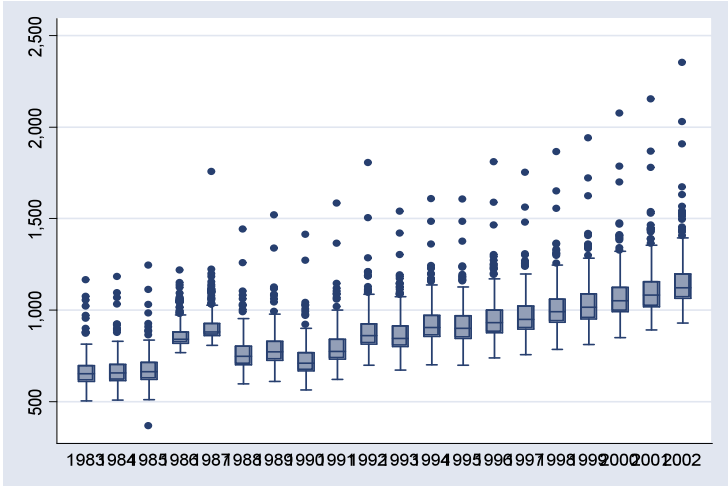
In general, there are two main objectives for the central government to equalize income across lower levels of government. First, equalization can facilitate an efficient allocation of production factors. Second, there are strong motives for horizontal equity in the distribution of public services, to create equal opportunities, irrespective of where you live.⁹

⁹ For a more detailed discussion about this, see, e.g., Chernick (2004).

There is considerable variation in the local income tax base and, therefore, in local income tax revenues between municipalities. In 2002, the average taxable per-capita income in Sweden stood at SEK 115,561, with a range from SEK 93,011 (Borgholm) to SEK 234,993 (Danderyd). The distribution of the tax base over time is visible in Figure 4. Note that the tax base has gradually increased over the last twenty years (both in terms of mean values and in terms of minimum values). It also seems like there have been less municipalities with very low tax bases over the years; while there were one municipality in the early 1980s with a tax base lower than the lower adjacent point, this has not been the case since the mid 1980s. At the same time, however, the distribution of the tax base has been stretched out upwards, according to the pattern in Figure 4.

The variation in the tax base is mainly due to differences in employment levels and stands in contrast to the political objective to ensure that all municipalities should be able to provide similar levels and standards of public services.¹⁰ In the terminology of Rodden et al. (2002), Sweden is a highly “ambitious” country regarding this objective. For example, a system of revenue and expenditure equalization was introduced in 1993 and, then, modified in 1996.¹¹

Figure 4. Distribution of the municipal tax base, 1983-2002.



¹⁰ Sweden has, from an international perspective, a high minimum standard for local public services.

¹¹ Such a system had existed earlier, although less visible.

The purpose of revenue equalization is to bring per capita tax revenues in all municipalities close to the national average. After 1995, municipality i 's contribution, C_i , to the tax equalization system is calculated as

$$(1) \quad C_i = 0.95n_it_{95}(y_i - y),$$

where n_i is the number of inhabitants (as of the previous year's November 1), t_{95} is the average tax rate prevailing in 1995, y_i is the municipality's average taxable income, and y is the country-wide average taxable income.¹² A municipality thus pays into the equalization system depending on its average taxable income compared to the national average; if $y_i > y$, the municipality pays into the system (positive contribution), and if $y_i < y$, the municipality receives money from the system (negative contribution).

Since total tax revenue for municipality i is given by

$$(2) \quad T_i = t_in_iy_i,$$

where t_i is the municipal tax rate, net income tax revenue is given by

$$(3) \quad T_i - C_i = n_i(t_i - 0.95t_{95})y_i + 0.95n_it_{95}y$$

Apart from tax equalization, there is also expenditure equalization. Expenditure equalization seeks to reduce differences in structural cost conditions of public services across municipalities. This is done for 16 different service blocks separately. Cost conditions for each service block reflect local social and demographic structures and other characteristics of the municipalities. A per-capita standard structural cost is calculated as a reference value, which is equal to the national average cost. Local governments with unfavorable cost conditions receive an equalization grant, while those with favorable conditions pay a fee. The grant or fee compensates for the full per-capita difference between the local and average cost conditions. Since the payments are based on cost conditions rather than actual costs, local governments have an incentive to minimize actual costs and generate windfall profits. Total

¹² The per-capita tax equalizing grant that a municipality receives, G_i , is hence given by $G_i = 0.95t_{95}(y_i - y)$.

funds redistributed through the system are small, amounting to about one percent of total revenues of the local public sector in 1998.

4.2 Incentive effects

The revenue equalization system affects the incentives for municipal tax and development policies. Starting with tax policies, von Hagen and Dahlberg (2004) show that the effect of a change in the tax rate on net tax income is given by;¹³

$$(4) \quad \frac{\partial(T_i - C_i)}{\partial t_i} = n_i y_i \left(1 + \frac{t_i \partial n_i}{n_i \partial t_i} + \frac{t_i \partial y_i}{y_i \partial t_i}\right) - 0.95 \frac{t_{95}}{t_i} n_i y_i \left[\left(1 - \frac{y}{y_i}\right) \frac{t_i \partial n_i}{n_i \partial t_i} + \frac{t_i \partial y_i}{y_i \partial t_i}\right].$$

The first term in equation (4) gives the response of local tax revenues to a change in the tax rate. If the tax-paying population is attracted by declining local tax rates and local per-capita income rises due to declining tax rates, the two elasticities in the parenthesis are negative. Thus, if the combined elasticities are sufficiently large, a rate hike may reduce tax revenues. The second term shows that this disciplining effect of tax-payer mobility is weakened by revenue equalization, as the losses in tax revenues are partially offset by equalization payments. This effect is stronger for low-tax rate municipalities (where t_{95}/t_i is large) and for relatively rich municipalities (where $y/y_i < 1$.) Likewise, there is an incentive for high-tax municipalities to lower their tax rates. An indication that these kind of incentive effects are at work is given in Figure 5. Figure 5 plots the tax rates at the 5th and 95th percentiles in the distribution of local tax rates as share of the average local tax rate among all municipalities. While there seems to be a slight upward trend for the tax rate at the 5th percentile¹⁴, there seems to be a slight downward trend for the tax rate at the 95th percentile.

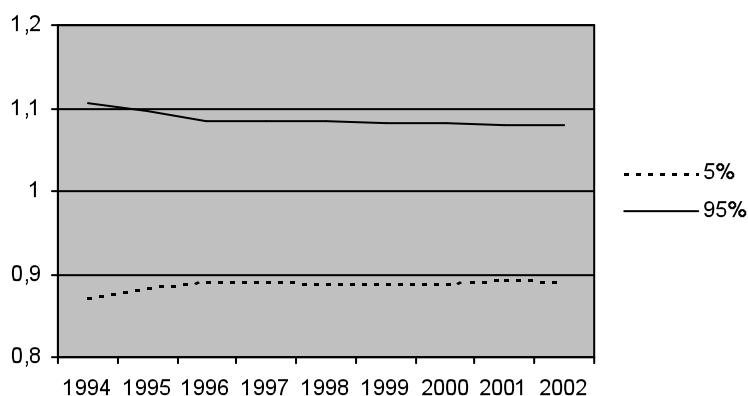
For similar reasons as discussed above, relatively low-tax rate municipalities loose tax revenues, if they engage in successful local development policies raising employment or

¹³ Equation (4) is obtained by differentiating equation (3) with respect to the local tax rate.

¹⁴ An indication that this kind of incentive effect is at work is also given in Figure 2, where it was noted that if there is any tax drift going on, it is among the municipalities with the lowest tax rates.

average taxable incomes.¹⁵ Equalization thus discourages the use of local development policies to raise additional income.

Figure 5. Evolution of the tax rates at the 5th and 95th percentiles over time (as share of the average tax rate in each year).



In practice, the total volume of tax revenues redistributed by the equalization scheme seems rather low. In 1998, it amounted to a mere 3.3 percent of total municipal revenues. But note that this does not imply that equalization and the incentive effects it creates for local economic policies are unimportant. The small amount of redistribution may just be the result of an equilibrium process of convergence.

As argued by Chernick (2004), the Swedish equalization system is however likely to have both positive and negative effects on economic efficiency. Essentially, fiscal equalization affects the competitive behavior of the municipalities. A potential problem with capacity equalization is that it offsets most of the variation in the tax base.¹⁶ The incentives to improve efficiency become weaker since municipalities may become less likely to pursue fiscal policies that increases the average income of its residents, but that do not lessen the average income of its neighbors. On the other hand, strategic behavior to increase the own tax base at the expense of its neighbors may become less likely.

¹⁵ Differentiating equation (3) with respect to municipality i 's tax base, we get $n_i(t_i - 0.95t_{95})$. That is, for those municipalities with tax rates lower than 95 percent of the average tax rate in 1995 will get negative net tax revenues when their tax base increases.

¹⁶ Chernick finds that the grant system, based on the overall distribution of grants, offsets between 62 and 100 percent of potential revenue from variations in fiscal capacity.

5. Tax competition

Are there any strategic interactions among local governments in the setting of local tax rates? Theoretical work in public economics has for long recognized strategic interactions among local governments.¹⁷ A growing empirical literature is now also devoted to the idea that fiscal policies may not be set in isolation. Analysis and knowledge of strategic interactions is important for a couple of reasons. The main reason is perhaps that the existence of strategic interactions among local governments has consequences for how central government policy shall be designed (should there, for example, be any corrections through the intergovernmental system or any limitations in the local tax discretion?). In addition, the choice of policy may depend on the underlying source of the interaction; for example, while tax competition may lead to inefficiencies in the provision of public services if residence location decisions are determined by fiscal considerations, strategic interaction in tax-setting among local governments along the lines of yardstick competition works as a disciplining mechanism and thus increases the efficiency of the undertaken policy.¹⁸ It is thus desirable to identify the source of the interaction.¹⁹

The empirical studies rest on different assumptions regarding the source of the interaction. We will briefly discuss two possible sources of interaction in tax-setting at the local level; tax-base mobility (tax competition models) and comparative performance evaluation (yardstick competition models).²⁰ Both models of tax competition and yardstick competition generate a reaction function, where the optimal tax policy in a jurisdiction depends on own exogenous characteristics and the tax policy of neighbouring jurisdictions. Thus, these two models lead

¹⁷ See, e.g., Wilson (1999) for an overview of theories of tax competition.

¹⁸ In the yardstick competition theory, voters are assumed to be imperfectly informed about the policies undertaken by their elected representatives. Self-interested politicians might take advantage of this information asymmetry. The main idea is that voters can use other governments' policies as a yardstick to evaluate their own government and better distinguish between good and bad politicians. Hence, this argument implies that strategic interaction in tax-setting among local governments works as a disciplining mechanism and thus increases the efficiency of the undertaken policy.

¹⁹ A few attempts have been made to distinguish between the theories underlying the source of the interaction. For yardstick competition models see, e.g., Besley and Case (1995) and Revelli (2002). For tax competition models see, e.g., Brett and Pinkse (2000) and Buettner (2003).

²⁰ These are categorized by Brueckner (2003) as the resource-flow and spillover models. Also, see Revelli (2004) for an overview of spatial interactions among governments.

to the same empirical specification with the prediction that the slope of the reaction function is different from zero.

A number of empirical studies that rely on the tax-competition model have estimated a tax reaction function. These include Brueckner and Saavedra (2001) who focus on property taxes for cities in the Boston area; Brett and Pinkse (1997) who focus on local property taxes in Canada; Buettner (2001) who studies the local business tax in Germany; and Hayashi and Boadway (2000) who examines provincial corporate income taxes in Canada. In all, the empirical evidence suggests that a jurisdiction's tax policy depends on the tax rates in nearby jurisdictions. Similarly, empirical work resting on yardstick competition models find evidence of horizontal interaction in local tax-setting, see, e.g., Heyndels and Vuchelen (1998) for Belgian municipalities; Revelli (2002) for UK local governments; and Solé Ollé (2003) for Spanish municipalities. To date there is no study investigating strategic interactions in tax-setting in Sweden.²¹

In a decentralized economy where different levels of governments co-occupy the tax base, there might also be vertical interactions in tax-setting. In the Swedish economy, the central government shares the income tax base with the local and regional governments. The idea behind vertical fiscal interactions is that authorities of different levels of government tend not to take into account the negative effect of an increase in the tax rate on the tax base. Evidence for Sweden suggests a negative relationship between tax rates at the local and regional level in Sweden (Andersson, Aronsson and Wikström, 2004).

From a more technical point of view, it is important to take strategic interactions (both horizontal and vertical) into account in order to understand the determinants of the local tax rate. Neglecting strategic interactions in empirical work examining the determinants of local tax rates may lead to biased estimates on municipality-specific variables such as the proportion old, the tax base and intergovernmental grants (omitted variable bias).

²¹ However, Dahlberg and Edmark (2004) find evidence of strategic interaction in welfare benefit levels among Swedish municipalities.

6. The determinants of local tax rates in Sweden – some empirical evidence

Swedish research on local governments has mainly been concerned with the expenditure side (see, e.g., Aronsson and Wikström, 1996, Bergström, Dahlberg and Mörk, 2004, Dahlberg and Johansson, 2000, and Dahlberg and Lindström, 1998). Very few studies exist investigating the local tax rates. This section aims at providing some preliminary evidence for some of the variables that are supposed to affect the local tax rates. The empirical evidence will be based on an econometric analysis of a panel of Swedish municipalities.

From existing empirical work a number of important determinants can be identified. These include intergovernmental grants, the local tax base and the demographic structure of the population in the municipality. Furthermore, there is evidence showing that political factors as well as neighbouring municipalities' tax rates influence the tax-setting behaviour of municipalities. The data set constitute a balanced panel of 267 municipalities²² over the period 1983-2002. It contains information on the local tax base, intergovernmental grants, the share of young (under 16), the proportion of elderly (65 and above), the local unemployment rate, population size, population density.²³ The model is estimated for three different periods; for the whole period 1983-2002 (presented in the first column in the Tables); for the sub-period 1983-1990 and 1994-2002, i.e. before and after the tax limit was introduced. It can be noted that the period after the introduction of the tax regulation in 1991 was followed by the 1991 tax reform and the grant reform in 1993.

The empirical results (presented in Table 1) can be summarized as follows. The tax base has a significant and negative effect on the tax rate for the whole period and it has a significant and positive effect on the tax rate in the latter period. In the period before 1991, taxable income has no significant effect on the municipal tax rate. Intergovernmental grants has a significant and positive effect on the tax rate for the whole period. This result seems mainly to be driven

²² During this time period, there has been a number of break-ups and mergers of municipalities. All municipalities that have been involved in these types of changes are excluded from the sample, leaving us with 267 municipalities. All data comes from Statistics Sweden.

²³ To save space, detailed information about the data and the estimation procedure used is not reported but is available from the authors upon request.

by the variation in the period before 1991; in the period after 1994, grants have no significant impact on the tax rate.²⁴

According to the results in Table 1, the demographic structure of the municipality is of more importance for the tax rate before 1991 than after 1994; the share of young people has a positive and significant effect on the tax rate (as could be expected) and the share of old has a negative and significant effect (perhaps less expected, even though we would expect it to have a positive effect after the care for the elderly reform) in the earlier period. In the latter period, the share of young and old have no impact on the local tax rate (somewhat unexpectedly). Population density affects the tax rate in the earlier period; the more sparsely populated a municipality is, the lower is the municipality's tax rate. Finally, population is a significant determinant in all periods; the larger the population in a municipality, the lower is the municipality's tax rate (this result might indicate economies of scale in the production of public services).

Table 1. Determinants of municipal tax rates.

Period:	1983-2002	1983-1990	1994-2002
Tax base	-.0005*** (.0002)	-.00008 (.00013)	.0013*** (.00047)
Grants	.00003*** (5.49e-06)	.00004*** (.00001)	-2.55e-06 (.000011)
Young (0-15)	.020* (.0110)	.052*** (.0157)	-.008 (.0280)
Elderly (65+)	.007 (.0096)	-.049** (.0217)	-.005 (.0149)
Density	-.0014*** (.0004)	-.0010** (.00049)	.00007 (.0011)
Population	-.00001*** (3.28e-06)	-.00004*** (.00001)	-.00003*** (8.02e-06)
# of obs	5432	2133	2471

Note: The estimations include fixed municipality and year effects. *, **, *** denotes significance at the 1, 5 and 10 % level, respectively. Standard deviations in parenthesis.

²⁴ This result is in line with previous work on Swedish local governments; while Bergström, Dahlberg and Mörk (2004) and Dahlberg and Mörk (2004) find no, or very small, effects of grants on municipal employment, Ahlin and Mörk (2004) find no, or very small, effects of grants on school expenditures and teacher to student ratios.

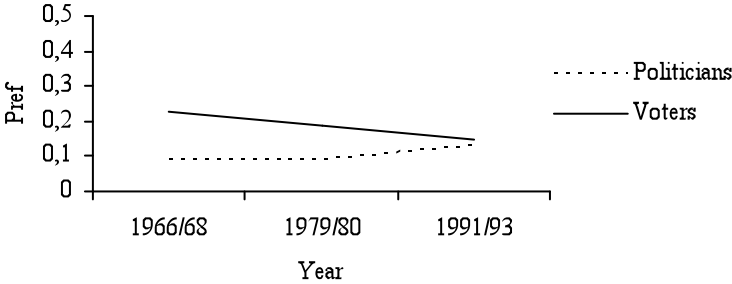
Recent work in political economics stresses the importance of political factors in determining political and economic outcomes. There is for example a common belief that left-wing governments tax more heavily than right-wing governments. In a study on Swedish local governments, Pettersson-Lidbom (2003) finds evidence of a party effect on tax and spending policy: on average left-wing governments spend and tax 2.5 percent more than right-wing governments. Using the model of Table 1, and controlling for the ideology of the majority in the local council during the sample period, confirms this result.

The potential importance of strategic interactions was discussed in Section 5. If strategic interactions are present we would expect to find some pattern in the raw data. Simple correlations and preliminary estimation results analysing the relationship between the tax rate in a municipality and the tax rate in nearby municipalities, suggest a positive relationship.²⁵

7. Voters’ and politicians’ opinions about local taxes

Section 3 presented some descriptive statistics on the municipal tax rate, concluding that, on average and after taking institutional reforms into account, the tax rates seem to have been

Figure 6. Preferences for a tax decrease



rather constant over time. In light of the debate of a rapidly growing public sector with an increased tax burden, it is of interest to investigate voters’ and politicians’ willingness to pay. What are voters’ and politicians’ opinions about local tax rates? Are they, generally speaking, satisfied with the local tax rate or do they want it to be increased or decreased? Survey data may provide some indication. The data has been collected by political scientists in Sweden at three points in time; 1966/68, 1979/80, and 1991/93.²⁶ Descriptive statistics from the survey

²⁵ The results are available from the authors upon request. A complete analysis of strategic interactions in tax-setting is beyond the scope of this report and is left for future research.

²⁶ The data is described in more detail in Dahlberg, Mörk, and Ågren (2004).

question “Do you think it is more urgent to lower the municipal tax rate than to increase the municipal services?” are presented in Figure 6.²⁷ According to Figure 6: i) the proportion among both politicians and voters answering “yes” to the survey question has been fairly constant over time (approximately 19 percent of the respondents answered “yes”)²⁸, ii) there seems to be a convergence process going on between voters and politicians; while a higher proportion of voters relative to politicians wanted lower tax rates in the second half of the 1960s, the proportion is almost identical between the two groups in the early 1990s, iii) the proportion of voters answering “yes” has decreased over time while the proportion of politicians answering “yes” has increased over time.

8. Potential pressures on the local tax rate

In this section we aim at pointing at two circumstances that, in the future, can result in an upward pressure on the municipalities’ tax rates; the aging population and the financial situation of the municipalities.

8.1 The aging population

A deteriorated local tax base may put an upward pressure on the municipalities’ tax rates and the aging population has been a central question in the public policy debate. According to the Swedish Association of Local Authorities (SK, 2000), the most important component of the municipalities’ tax base is the total number of hours worked in the municipality.

Consequently, the share of elderly people might be an important factor in determining the local tax base, and a shift in the demographic structure towards a higher share of elderly may lead to a decreasing local tax base.

The aging population is also one of the main threats to the local tax base, according to SK (2000). In the year 2005, the large cohort born in the 1940s in Sweden will start to retire from the labor force. Around the year 2010, the share of the population in working age (19-64 years old) will decrease according to forecasts from Statistics Sweden. Those cohorts becoming of working age are not large enough to replace the retiring cohort. According to the Tax Base Committee’s final report (SK, 2000), this will lead to a decreasing local tax base, and, hence, a potential upward pressure on the local tax rates.

²⁷ The exact wording of the question has been slightly different in different surveys.

²⁸ This is in line with the tax rates actually being constant over time, as discussed in Section 3.

It is worth noting that there is no econometric analysis investigating the effects of an aging population municipalities' tax revenues; the local tax rates and the local tax base. The preliminary estimation results in Section 6, indicates that there might be no effects on the municipalities' tax rates from an increase in the share of persons 65 years old or older, the effects on the local tax base still remains to be examined. More careful empirical work needs to be conducted before drawing any conclusion about the effects of the aging population on the municipalities revenues.

In a longer perspective, a growing share of elderly will naturally also effect the cost of provision of elderly care, one of the major responsibilities of the Swedish municipalities. The potential pressure on the municipalities' financial situation from decreasing tax revenues, as a result of an aging population, can hence be magnified by increasing costs for care of the elderly.

8.2 The municipalities' debt

The financial distress that many municipalities face may also result in an upward pressure on the local tax rate. During the early 1990s, several of the Swedish local governments ran into severe economic problems, manifested in large recurrent deficits. The evolution of the municipalities' debt over the last two decades (not shown), shows that even though the median debt has been rather constant over the years and that some municipalities have had more or less balanced budgets in each year, there have been more municipalities with large debts during the 1990s.

Many of the financially distressed local governments turned to the central government for financial support. Among the first to apply for financial help from the central government were the municipalities of Haninge and Bjuv, which were very close to bankruptcy at the time. They were both bailed out by the central government.

Following these incidents, a larger number of municipalities turned to the central government for financial relief. To handle their demands, the central government set up two committees, the *Housing Delegation* and the *Local Authority Delegation*. The *Housing Delegation* was established in 1998. Its work focused primarily on cases where the municipalities' financial problems were connected to a municipal housing company. The *Local Authority Delegation* was established in 1999, after the central government realized that many municipalities would

not meet the balanced budget requirement by the year 2000. The concerned local governments claimed that their inability to balance their budgets was due to external factors. Responding to such claims, the central government decided to establish a transfer program for municipalities where this was found to be true. Municipalities could apply for such funds and the Local Authority Delegation was appointed to prepare the cases and to propose which municipalities that were to be granted a positive response. The central government did, however, have the final decision. The decisions made by the Local Authority Delegation were all made at the same time in the year 2000.

An indication of the magnitude of the problem is provided in Table 2, where it is shown how the applications were allocated among the different decision-making authorities. As is clear from the table, as many as 136 applications were submitted to the central government asking for financial relief (i.e. asking to be bailed out), claiming that, without the relief, the municipalities would not be able to fulfil their tasks.²⁹ 60 of the applying municipalities were bailed out.³⁰

Table 2. Relief Applications in the late 1990s

Decision maker	Granted applications	Rejected applications	Total
Housing Delegation	24	38	62
Central government (after suggestion from Local Authority Delegation)	22	23	45
Central government (after suggestion from both committees)	14	0	14
Central government (without suggestion from any committee)	0	15	15
Total	60	76	136

Today, four years after the imposition of the law stating that the municipalities have to balance their budgets, there are still many municipalities that have large budget deficits, indicating that the requirement does not have any real impact;³¹ An important question is

²⁹ Out of the 136 applications summarized in table 2, 107 were from different municipalities.

³⁰ A more detailed discussion about the financial relief programs and the bailout problem in Sweden is provided by von Hagen and Dahlberg (2004).

³¹ It can hence be noted that the financial relief provided by the Local Authority Delegation in the year 2000 did not lead to a situation in which most municipalities balance their budgets. One reason for this might be that extended bailouts from the central government in the past might lead to increased expectations among the municipalities to be bailed out by the central government in the future in cases of financial distress. That is, past bailouts might have behavioural effects on the municipalities in the sense that they will behave in a, financially,

what effect these municipal deficits will have on the municipalities' tax rates. If the central government in the future will be less willing to bail out the financially distressed municipalities, there is a risk that this will lead to an upward pressure on the municipalities' tax rates.

9. Concluding remarks

The main conclusions in this report can be summarized as follows.

First, data does not seem to support an upward trend in the municipalities' tax rates; when taking institutional changes into account, the average municipal tax rate seems to be more or less constant over time.

Second, the tax equalizing system introduced in 1996 implies that (i) low-tax municipalities and/or rich municipalities have incentives to increase their tax rates (increasing the tax rate will increase their total net tax revenues) and (ii) low-tax municipalities have incentives *not* to engage in development policies that lead to increases in their tax base (increases in the tax base will decrease their total net tax revenues). Descriptive statistics indicates that the local governments may have reacted on the mentioned incentive effects. Clearly, more work needs to be done in order to ascertain whether the incentives have any real effects on the municipalities policies, and whether it is economically important.

Third, there is little empirical work on Swedish data examining the determinants of the municipalities' tax rates and their tax base. We believe it to be desirable for future work to focus on the role of intergovernmental grants, the effect of the local tax base and more specifically, the demographic structure of the population, in order to provide a basis for a fruitful discussion about local taxation in Sweden. Furthermore, analysis devoted to understanding the behaviour of Swedish local governments should perhaps also include political factors as well as the influence of neighbouring municipalities' tax rates on the tax-setting behaviour of municipalities, as suggested by previous empirical evidence.

more irresponsible way. Investigating the financial relief program that was in effect in Sweden between 1974 and 1992, Pettersson-Lidbom and Dahlberg (2003) find evidence that supports this line of reasoning.

Finally, as regards the pressures on the local tax rate, an introduction of a local property tax has been discussed in the public policy debate. However, while some advocate a replacement of the local income tax (as, e.g., Boije et al., 2004), others believe that the property tax should be introduced as a supplement (as, e.g., SK, 2000). Obviously, this raises questions about the financing of the local public sector, the degree of grant dependency and the need of a new or additional equalization system.

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