

# Tax Autonomy and Distributive Policies of the Italian Municipalities: The Case of the Region Emilia Romagna

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## Abstract

On the basis of a panel-data containing final budget-sheets and structural data of all the municipalities of the region Emilia-Romagna from 1998 to 2004, we study the evolution of the municipalities' public finances in a period of remarkable institutional changes related to fiscal federalism.

The econometric analysis shows how the local tax setting is affected by the traditional local internal variables, by the political/fiscal orientation of the central governments' ruling coalitions and by the latter attitude to devolution of functions to lower level governments. Unexpectedly, the municipal governments exploit a form of fiscal illusion with their local electorate.

**Keywords:** Local tax autonomy, Devolution of functions, Fiscal illusion

**JEL codes:** H7, H71, H77

## 1. Introduction

This paper aims at analyzing the determinants of the discretionary tax power of all the municipalities of the Emilia Romagna (ER) region, in the period 1998-2004, as related to the traditional internal determinants of local tax setting as well as to the political orientation of the central government ruling coalitions and to the latter attitude to devolution of functions to lower level governments. The contribution of the paper is to clarify how the devolution with transfers' cut affects the municipal choices related to two tax instruments of the municipalities: the property tax and surtax on income. The chosen period of analysis is not fortuitous. It is split into two legislatures - the centre-left legislature up to 2001 and the centre-right legislature afterward - which, at a national level, are characterised by different fiscal attitudes/ideologies toward local tax autonomy and fiscal federalism and toward distributive policies by means of tax levels and tax choices. (Note 1) The choice of the ER region is not accidental too. ER is historically a stronghold of the (former) communist party and has been, with few exceptions, always ruled by left wing local governments, with a correspondingly presumably clear fiscal attitude/ideology toward local taxation (see below). In this respect the analysis of how the municipalities of the ER Region react to different political oriented central governments' choices offers an interesting laboratory like testing of local public choices. (Note 2)

The devolution of functions to lower level governments has assumed a remarkable role both in the US and in the EU. In the US a number of programs previously managed and financed by the Federal Government have been transferred to the states. Grants from central government are still their principal source of financing. Nevertheless, the states have both the discretionary power of deciding the specifics of the programs and of rearranging their budgets even by diverting finalized funds to other uses (Dixit and Londregan, 1998). In the EU, the use of transfers among the member states for specific purposes, such as agricultural policy and programs of regional and industrial development, is well known. Moreover, within each EU member state, a remarkable quota of the state budget finances lower level governments activities. As a consequence, the issue of the degree of tax autonomy for lower level governments and the use of their still limited tax power becomes increasingly important. (Note 3)

In this respect, the Italian guidance to the financing of local government activities and the extent of the activities themselves has changed during the last decades. The tax reform of the '70s imposed the centralization of revenues, leaving the financial support of the decentralized expenditures to fiscal transfers from the centre. (Note 4) Even in the second half of the '80s, when the role of local governments in the supply of goods and services increased, the financing of the decentralized functions was afforded in terms of the proper transfers mechanisms from the centre to peripheral governments. Only in 1993, the introduction of the local property tax (*ICI=imposta comunale sugli immobili*) determined a non negligible degree of tax autonomy of the municipalities, in

accordance with the economic theory recognising, for modern tax systems, the property tax's bent to financing local public expenditure.

The subsequent period, analysed here, includes the processes of reforms at a national level occurred during the centre-left legislature (1996-2001) and the centre-right legislature (2001-2006). The centre-left reforms, known as *administrative federalism*, formally begun in 1997 (Note 5) with the devolution of new functions, previously of competence of the central administration, to regions and municipalities in accordance with the subsidiarity principle required by the EU. The new functions needed new sources of financing. In 1999, a new source of tax autonomy for Italian municipalities and regions, given by a local surtax on income (*Addizionale IRPEF*), was introduced: the municipalities can discretionally choose both whether to levy it or not and the local tax rate into a given band decided by the state law. The financial law for 2001 (l. n.388/2000) increased the ordinary funds for state transfers to local governments, earmarked to investments related to the new decentralised functions. (Note 6) In 2001 the centre-right coalition succeeded to the government after the political elections. Among others, this ruling coalition included the Northern League - an Italian political party whose political program advocates fiscal federalism with the transformation of Italy into a federal state with a much greater local autonomy. The beginning of the new legislature is characterised by a constitutional reform (November, 2001) aiming in principle at strengthening local government powers. The 2001 constitutional reform was introduced by the centre-left and it was not applied, likely for this same reason, by the centre right government, in spite of the declared objectives of devolution of function in federal sense. Moreover, in a period of high and increasing national debt-GDP ratio, amongst others, the new legislature with its first financial law for 2002 and with the "internal pact of stability" for 2002 became characterised by restrictions on both local public expenditures and central government grants to municipalities. Indeed, the centre-right government aiming at a lower tax pressure - announced as a primary goal during the electoral campaign - other than further reducing the central grants, tried to constraint the local tax autonomy by freezing the surtax on income by means of the state financial law for 2003: municipalities that had used it before 2003 could not increase it further, while the remaining municipalities could introduce it, but at a reduced rate (0.1% yearly rather than 0.2%); penalties for those municipalities having a budget deficit were also introduced.

In this context, characterized by conflicting central policies as for local governments' fiscal competences, we analyze the interaction among different levels of government from the point of view of the municipalities. We aim at verifying the use of the latter discretionary tax power in a period split, as for the central government, into two different legislatures, with a left-wing government coalition (formed by the former communist party - for the first time at the government - socialists and left-wing demochristians) followed by a right-wing government (led by Berlusconi joint with the extreme-right parties as well as the right-wing demochristian party and the Northern League). In this respect, the analysis of how the municipalities of the ER region react to the central government ruling coalition offers an interesting laboratory like testing of local public choices. As mentioned ER has been, with few exceptions, always ruled by left wing local government coalitions. The ER prevailing political attitude has addressed its economic system, characterised by thousands of cooperatives with most of people in ER belonging to and working for them. The peculiar nature of the ER economic system is considered responsible for the high standard of living of its inhabitants. ER is still among the richest regions of Italy: agriculture is its most important economic activity; industry is also well developed, especially tourism along the Adriatic coast, as well as the tertiary sector, characterised by a strong concentration of insurance companies and banks.

On the basis of a panel data set containing the final budget sheets and structural data of all the 341 municipalities of ER for the period 1998-2004, we study, section 2, the evolution of the main components of the municipality finances, on which basis we assess their fiscal autonomy/dependence from the centre. In section 3, we empirically analyze the determinants of the municipalities' choices related to property tax (*ICI*) and to the local surtax on income (*Addizionale IRPEF*). These two taxes have different features. The property tax is related to the property values as assessed on the land registry basis and mainly affects the real estate owners. The local surtax on income is related to the personal income tax and the proportional increase of its rate reduces the progressivity of the system and overall increases the personal income tax burden on subordinate workers, because tax evasion and tax elusion make the Italian personal income tax lie particularly on dependent workers' income. With such instruments, we would expect that, when reacting to the right-wing central government's policies, the left-wing local governments, required to resort their own tax revenues, would prefer an increase of the property taxation rather than of the personal income taxation. By means of two tobit models, we estimate whether and how the municipalities' choices on property tax rate and local surtax rate on income are affected by the choices of the political ruling coalition of the central government, by the level of state grants, by possibilities of redistributive

policies, by the local economy and by other structural conditions. We show that, together with traditional internal determinants of local tax setting policies (such as the structural characteristics of the jurisdiction, the socio-demographic characteristics of the resident population, and local GDP (Wildasin, 1986)) the political orientation of the central government and the (remarkable reduction of) central grants (only apparently in favour of fiscal autonomy) significantly affect the local governments' discretionary choices. Unexpectedly, the latter appears basically exploiting a form of fiscal illusion of their electorate. Conclusions follow in section 4.

## 2. Some stylized fact

### 2.1. The public finances of the ER municipalities

ER is one of the 20 administrative regions of Italy. It is in the Centre of Italy, bounded by the Adriatic Sea on the East, by the Po river on the North and by the Apennine Mountains on the South. ER is divided into 9 provinces and 341 municipalities. It is politically characterised by homogeneous left-wing political orientation of its local governments (region, provinces and municipalities). ER is characterised by an efficient and well developed economic system. These features make ER interesting for the analysis of local public finances in a period (still in progress) of important institutional changes and public finances' slump.

We now refer you to table 1, giving a picture of the universe of the ER municipalities according to their distribution into the 9 provinces, also distinguishing the municipalities by segments of resident population. Notice, in particular, how the 341 municipalities vary by the resident population: 53.37% of the municipalities are of the smallest dimensions having less than 5000 habitants, whereas 3.5% of the municipalities have a population of more than 50000 habitants. Finally notice that the status of "metropolitan municipality" (a legal status only applying to 14 Italian municipalities) in ER only applies to Bologna.

Here is a brief outline of the ideas from figure 1. Figure 1 compares aggregate total revenues, R, with total expenditures, E, of the ER municipalities (as a share of local GDP). R and E are very high only in 2003, when they are clearly separated from the trend. This may be the effect of GDP fluctuations during the considered period. However, both R and E have an analogous course, with total revenues slightly lower than total expenditures all over the considered period. The increasing discrepancy between R and E during the triennium 1998-2000, partially due to the increased expenditures required by the devolution of new functions to municipalities, faces a moderate reduction in the years 2001-2002 because of the effects of the financial law for 2001 increasing central transfers to municipalities (Note 7) and the subsequent restrictions on expenditures in 2002. The state financial law for 2003, reducing the central grants, resulted in increasing the discrepancy in 2003 and mainly in 2004. Notice, however, the virtuous management of the ER local public finance, maintaining the extent of the difference below 2 percentage points.

The direct comparison between E and R, often taken as a proxy of the public finances' difficulties faced by the municipalities in the considered period, might not properly show the public finance features of the municipalities in the period under consideration. Therefore, we look at the principal components of expenditures and revenues (as related to regional GDP) for the regional aggregate of all the municipalities. We refer you to figures 2 and 3. On the revenues' side, there is a clear reduction of grants from central government beginning at the end of 2001. The tax revenues are not able to fully compensate the reduction of the current transfers from the centre. Since 2002, but mainly in 2003, the persistent increase of the weight of tax revenues was accompanied by actions of securitisation of municipal assets. Moreover, most local services were externalised, which means a reduction in real terms of the "no-tax revenues" as shown in Figure 2. The expenditure side is characterised by clear decreasing trend of the current expenditures (in terms of local GDP) between 1998 and 2004, which is not nearly recovered - in terms of points of GDP - by a corresponding growth of the capital expenditures required by the new functions devoluted to municipalities. Capital expenditures, however, show an increasing trend up to 2003.

Here is a brief outline of the ideas from table 2 that reports the composition-ratios of the ER municipalities' revenues and the main indicators of fiscal autonomy/dependence from the centre. Notice that the ratio between autonomous tax revenues and total revenues, in the period 1998-2004, increased from 20.2% to 22.78% showing a slight reduction in 2001. It emerges that the degree of tax autonomy is almost fully determined by the property tax. The other main source of tax autonomy, the surtax on income, was introduced in 1999. Only few ER municipalities used it at the beginning. It became increasingly important afterward, reaching 1.7% weight on total revenues in 2002 and 1.9% in 2004, in spite of the attempt, by means of the financial law for the year 2003, to limit the use of the surtax on income. We have excluded from the main index of tax autonomy the impact of the last introduced form of financing (*compartecipazione IRPEF*). This source of financing, formally recorded among taxes, is actually centrally determined as a share of the personal income tax revenues of the local jurisdiction and makes the municipal finances partially depending on the economic-business cycle, although, the

first year of application, it was computed so as to exactly equalizing the abolished transfers. Finally notice that the degree of dependence from current transfers from central and regional governments is remarkably decreasing all over the period passing from 17.2% to 6.8% of total revenues, with a main reduction of the grants from central government from 15.4% in 1998 to 3.8% in 2004.

Table 3 distinguishes the municipalities according to 5 segments of population and shows three series of revenues (as a share of total revenues) from current central government transfers, from the property tax and from the surtax on income. Notice that the smallest municipalities (band 1), having traditionally lower ability to pay taxes, show higher degree of dependence from governments' transfers all over the period. This source of revenue, drastically reduced after 2002, cannot be compensated by the increase of both the property tax and surtax on income, given that the ability to pay taxes cannot be further exploited in these municipalities. The highest reduction of transfers, in the period considered, is for those municipalities in band 4 that, on the contrary, can compensate with higher revenues from both taxes. Notice also the peculiar course of the revenues' composition for the "metropolitan municipality", having different financing features as compared to the municipalities of other segments of population, so that, for example, it was amongst those municipalities that did not apply the surtax on income the first year of introduction. (Note 8) The surtax on income became increasingly important afterward, reaching 3.3% of Bologna total revenues. Notice that the municipalities of bands 2 and 3, those with the highest ability to pay taxes, in order to face the reduction of the transfers, have resorted to tax revenues, mainly surtax on income (band 2) and property tax (band 3).

Overall, it emerges a relevant variability of both revenues from either tax. Given the amount of compulsory duties implying almost similar expenditures' structure for all municipalities, in order to clarify the kind of policies available to municipalities, in the next section we empirically analyse whether and how the choices of local taxation were affected, not only by the traditional internal determinants of local taxation, but also by the political orientation of the central government ruling coalition.

### **3. An econometric analysis of the determinants of tax autonomy of the ER municipalities.**

As already mentioned, in most of the modern fiscal systems, a property tax rate proportional to the value of the real estate ownerships, is destined to lower level governments, because it can connect the benefits of locally provided public goods and services to the costs sustained by the most likely consumers. (Note 9) In Italy, the property tax has been in force since 1993. It represents an important source of financing for the Italian municipalities and remarkably contributes to their tax autonomy. In 1999 the surtax on income was introduced as a further source of tax autonomy, although with a much lower impact on municipal revenues.

The econometric analysis here aims at analyzing the determinants of the discretionary choices related to property tax rate and surtax rate on income of all the ER municipalities, in the period 1998-2004, as related to the central government political orientation and to its attitude to devolution of functions to lower level governments as well as to the traditional internal determinants of local tax setting. We keep into consideration the amount of the municipalities' needs (in terms of expenditures), their structural socio-economic and demographic characteristics. (Note 10) It seems of interest to understand how the ER municipalities use their tax power in the considered period of conflicting central policies characterised, on the one side, by an increase of compulsory duties of municipalities and, on the other side, by a remarkable reduction of sources of financing from central government and ceilings to local expenditures.

The descriptive statistics of the variables used are summarized in table 4. The panel used here contains budget data of all the ER municipalities, as provided by the Department of Internal Affairs. It has been also integrated with the property tax rates collected by ANCI (National Association of the Italian Municipalities), with the surtax rate on income in force in each municipalities as collected by the Department of Economic Affairs, with information on municipalities (e.g., number inhabitants in various years, the structure of the population, etc...) from ISTAT as collected in the Geostat data-set by the Tagliacarne Institute and with the GDP calculated on a provincial basis by the Tagliacarne Institute.

#### *3.1. The determinants the Municipalities' choices of the property tax rates and surtax on income*

Tables 5 and 6 report average tax rates (e.g., *ici\_ord* = ordinary property tax rate, *ici\_ap* = "special" property tax rate for principal residence, *ici\_detr* = level of property tax deduction in euros, *irpef\_add* = surtax rate on income) for the period 1998-2004, respectively, of the ER region and by band of population. Looking at the figures, one immediately observes that, as well as the budget components previously analyzed, also the average tax rates result rather diversified for segments of population. In particular, table 6 shows that, on average, the metropolitan municipality (Bologna) levies the highest ordinary property tax rate in the whole period, it does not apply property tax deduction in 1998, 2002 and 2003 and postpones the use of the surtax rate on income to the

second year of its introduction. The municipalities of band 1 are those with the lowest average property tax rate, whereas the municipalities of band 4 show the highest increasing pattern. The regional average of  $ici\_ord$  shows an increasing pattern at an increasing rate with respect to  $ici\_ap$  that, like  $ici\_detr$ , are maintained almost constant. As for the surtax rate on income, the range of variation is quite limited. Notice, however, the increasing number of municipalities using this tax after its introduction. As for the distribution of the municipalities by provinces (not reported), those municipalities in the province of Rimini have always shown the highest ordinary property tax rate of the period, while municipalities in the province of Piacenza have the lowest. These choices might be affected by the prevailing economic activity of the provinces. In particular, Rimini, which is quite important for tourism and has a quite big share of houses of vacation, has kept a quite low rate for the principal residence (e.g., the tax rate affecting the local electorate). In a similar vein, in all the provinces, although to a different extent, the municipalities apply either property tax deduction or a tax rate lower than ordinary for the principal residence or both. In this respect, notice that the average of the ordinary tax rate applied by the ER municipalities has increased in the period considered from 5.8‰ in 1998, to 6.5‰ in 2005, as well as the average regional tax rate for the main residence (from 5.2‰ to 5.4‰) and the surtax rate on income (on average from 0.2% to 0.3%) as shown in table 5.

We now study the determinants of the municipalities' choices of the property tax rate and surtax rate on income by estimating two separate tobit models, each based on the following assumptions. We assume that the choice of the tax rate at time  $t$  is the result of a process not directly observed called "latent process" (Greene, 2000). The determinants of the choice of each municipality as for the tax rate chosen – e.g., the dependent variable,  $y^*$  – are not directly observable, but we know the final result of the decision, e.g. the tax rate chosen every year by each municipality  $i$ . Moreover, we know the political features of the central government and the fiscal variables depending on the latter choices as well as some economic and demographic features that could have influenced the municipalities' decisions. On this basis, through the econometric analysis, we infer the statistically relevant factors affecting the municipalities' choices about the property tax rate and the surtax rate on income and disentangle the impact of each of them for each decision.

Both the dependent variables – the property tax rate and the surtax rate on income – are left and right truncated continuous variables given that either choice occurs into a rank stated by the national law. In order to keep into account of all the available information on those tax rates, we use a two-limit Tobit model with latent regression  $Y_{it}^* = X_{it}\beta + \varepsilon_{it}$  and observed dependent variable  $Y_{it} = A$  if  $Y_{it}^* \leq A$ ,  $Y_{it} = B$  if  $Y_{it}^* \geq B$  and  $Y_{it} = Y_{it}^*$  otherwise.  $A$  and  $B$  are constant and  $\varepsilon_{it}$  is a continuous random variable with mean 0 and variance  $\sigma^2$ . In the property tax case, the range of the tax rate is between 4‰ and 7‰ of the property value as assessed on the land registry basis and, in the absence of decision by part of the municipalities, 4‰ is applied. Thus,  $Y_{it} = 4$  if  $Y_{it}^* < 4$ ;  $Y_{it} = Y_{it}^*$  if  $4 < Y_{it}^* < 7$ ;  $Y_{it} = 7$  if  $Y_{it}^* > 7$ , with  $Y_{it}^*$  being a linear function of exogenous variables. As for the surtax rate on income, it was not immediately applied by all the municipalities, but, it has become increasingly popular, with a remarkable increase for all the municipalities of all the bands of population since 2000 (see table 6). In this case,  $Y_{it} = 0$  if  $Y_{it}^* < 0$ ;  $Y_{it} = Y_{it}^*$  if  $0 < Y_{it}^* < 0.5$ ; and  $Y_{it} = 0.5$  if  $Y_{it}^* > 0.5$ . For the (local) surtax on income, the left-censored observations at  $Y_{it} = 0$  actually include all that municipalities that choose of not to levy the surtax on income in the considered year  $t$ , whereas the right-censored observation, 0.5%, is the maximum allowed by the law.

Notice here that the revenues from property tax are fully destined to municipalities and taxpayers fully associate the property taxation to the municipal choices. On the contrary, the surtax rate on income is perceived as a state tax, being assessed and paid together with the personal income tax. Finally, recall that although quantitatively low, the surtax on income offers quite relevant possibilities of manoeuvre to the municipalities, which can increase the rate within the ceiling of 0.5 percentage points, with annual increases not greater than 0.2 percentage points.

As for the independent variables, in order to capture the effect of the interaction between central and local governments, we consider the revenues from central grants normalized on the total expenditures, with the latter taken as indicator of the needs of the municipalities. We also consider a dummy variable taking on the value of 1 over the period of the right-wing central government coalition, and 0 otherwise, joint with a time trend, also considered for either tax choice. In this respect, notice that the political dummy capturing the right-wing government ruling coalition, if significant, indicates the deviation of the municipalities choices from the trend, that would have emerged, *ceteris paribus*, due to the central government policy. As for the traditional determinants of local tax setting, structural economic variables available at municipal level have been empirically studied in order to disentangle their possible influence on either dependent variable (see the descriptive statistics in table 4) as well as dichotomous variables that take into consideration the geographical

area (i.e., provinces that might have different social-economic attitude to local taxation) and the five segments of population. We have also considered those variables capturing the impact of redistributive policies allowed by property taxation (the use of property tax deductions, the presence of policies for the principal residence and the local “share of houses of vacations”). We have always included in every specification, always resulting significant, a polynomial of second degree in local GDP, in order to verify the likely influence of the local economy for the choices of the municipalities.

The main results of the regressions are in the table 7 and table 8. Table 7 shows the results of the tobit model for the choice of the property tax rate. Table 8 shows the results of the tobit models for the choice of surtax rate on income. Either result obtained for the choice of either local tax is quite robust as also shown by the parameters values qualitatively and quantitatively very similar in the different specifications of the different models.

### 3.1.1. The choice of the property tax rate

Here we comment the results in table 7, showing the variables resulting significant for choice of the ordinary property tax rate in two different specification of the model (Model 1 = random effects tobit regression model, and Model 2 = tobit estimates pooling regression). In what follows we refer to the results of Model 1 given that the Hausman test (1978) does not reject the null that the models are statistically non different (Test of  $H_0$ : difference in coefficients not systematic gives  $\chi^2(5)=0.63$  and  $\text{Prob}>\chi^2=0.9864$ ). (Note 11)

The choice of a given property tax rate is significantly influenced from the time trend as well as from the political orientation of the central government. It turns out that the ER municipalities increase on average the local property tax rates of 0.12 per year (trend effect). In the period of the centre right government, however, the political effect is relevant and is -0.07 on average per years, which, in a way, makes the year increase during the right-wing government of about 0.05. The share of current central transfers normalised on the aggregate amount of the expenditure, has negative sign, thus, showing that its reduction increases the property tax rate levied of about 0.6 per year.

As for the geographical location of the municipalities into different provinces, it is interesting to notice the significance, with the same negative sign of the provinces with respect to Rimini, taken as reference because it is the province, in the ER region, mainly exploiting tourism and with a quite high share of houses of vacations. Notice overall that about 0.6 of the year increase of the ordinary tax rate is explained by “share of house of vacation” located in the municipalities. In this respect, notice that among the discretionary policies for redistributive purposes available through property taxation, either decision the municipalities take about the policies on principal residence results statistically significant for the choice of the ordinary tax rate. In particular, the policy on the principal residence, represented by the dummy variable named “Principal residence policy” has positive sign. This variable signals two events: the presence of a reduced tax rate for principal residence and the fact that this reduced rate was increased the previous year. This seems to point out that municipalities choosing a lower property tax rate, *ceteris paribus*, also increase the rate for the principal residence. The property tax deduction takes a negative sign: the increase of tax deductions explains an average year reduction of 0.001 of the ordinary tax rate. Overall, although the ER municipalities pursue redistributive policies by property taxation with the different instruments available, their impact reduces over time, likely, to reinforce the revenue effect of the property tax by means of the ordinary tax rate: recall the right wing ruling coalition’s attitude against any increase of overall tax burden joint with the constraints to local government expenditures. Among the bands of population the municipalities in bands 1, 2 and 3 (less than 50,000 inhabitants) take the same sign. The positive sign points out the band of population with the highest difficulties (although significant only in the pooled estimates). Finally, the choice of the property tax rate shows a cyclical course with respect to the local economy, the sign of the log of GDP positively influences, of about 0.1 per year, the municipalities choices on property tax rate.

### 3.1.2. The choice of the surtax rate on income

We now refer you to table 8 reporting the results of the tobit models for surtax rate on income determination. As mentioned, the estimates are quite robust: in Model 1 (fixed effects tobit estimates) they are qualitatively and quantitatively similar to the random effect tobit estimates of Model 2. Here, however, the Hausman test for Model 2 rejects the null that the difference in coefficients is not systematic, it gives  $\chi^2(4)=11.95$ ,  $\text{Prob}>\chi^2=0.0177$ , therefore, we shall comment Model 1.

In this case, the choice of the surtax rate on income at municipal level is significantly affected from the central grants normalised on total expenditures (both at time  $t$  and one-year lagged). The lagged share of state transfers normalised on the aggregate amount of the expenditure, has positive sign explaining about 0.9 average increase per year, whereas the current share of state transfers (on total expenditures) takes negative sign explaining about

-0.3 of the year average increase. That is, the decisions on the surtax rate on income serve to maintain/adjust the expenditure level decided on the basis of previous year grants. In other words, the surtax on income seems to be used to rescue the likely needs generated in the previous year by means of a policy that proportionally increasing the income tax rate has a regressive impact on taxpayers and increases the overall tax burden of personal income taxation. The latter effect, in particular, was not appreciated by the right wing government, who, as mentioned, since 2003 almost unsuccessfully tried to freeze the surtax rate on the personal income tax. This central policy aimed at making the local choices consistent with the reduction of the overall tax burden announced during the electoral campaign. In this respect notice, however, that the time trend explains about 0.07 of the year average increase and the political dummy explains about the 0.12 increase per annum since 2001. (Note 12) This means that, in the period of the right-wing central government, the average year increase of the surtax rate on income is about 0.2, which is the maximum allowed.

The local GDP per capita is statistically significant with positive sign. This signal that also the choice of the surtax rate on income shows a cyclical course with respect to the local economy, as if the ER municipalities exploited the surtax rate on income mainly when the course of the economy allows it. Among the bands of population, municipalities in bands 1, 2 and 3 (e.g., those with less than 50,000 inhabitants) take positive sign with respect to bands 4 and 5, although only the municipalities in bands 1 and 2 result significant in the specification of the model.

#### **4. Summary of the results and conclusions**

After the analysis of the principal characteristics of the public finances of the ER municipalities, we have considered the effects of the interaction among different levels of governments from the point of view of the municipalities in order to verify how the latter use their tax autonomy by means of the property tax and surtax on income.

On the one side, it turns out that the internal determinants of local tax setting, such as, geographic and demographic characteristics, are remarkably important, as well as the local GDP that positively affects the municipalities' choices of both the property tax rate and the surtax rate on income. On the other side, the results show that the probability of highest levels of either local tax rate is negatively affected by the revenue-generating capacity of the current state transfers: the current amount of the government transfers, characterizing the ongoing devolution process, is a determinant of the choices on local taxation in that reductions of current government grants increase the probability of higher tax rates. Moreover, the surtax on income, in spite of its moderate revenues, plays a role in the choices of the municipalities, being also affected by the lagged value of the state transfers, possibly, to maintain/adjust the expenditure level decided on the basis of previous year grants. Still, the two instruments available to local governments are quite different from each other, being one related to the property values as assessed on the land registry basis and the other to the personal income tax. The property tax mainly affects the real estate owners of the local jurisdiction. The local surtax on income basically increases the personal income tax burden on subordinate workers and it is structured in a way that, by proportionally increasing the personal income tax rates, reduces the progressivity of the personal income tax system in the local jurisdiction. For it, we would have expected that, when reacting to the right wing central government policies, the left wing local governments, required to resort their own tax revenues to afford an increased amount of duties and functions, in a period of substantial reduction of central grants, would have preferred property taxation rather than personal income taxation. Nevertheless, the revenues from the property tax are of full competence of the municipal governments and taxpayers fully associate property taxation to the municipal choices. On the contrary, taxpayers perceive the surtax rate on income as a state tax, being assessed and paid together with the personal income tax.

The results show that the reaction to central government policies by part of politically homogeneous left wing local governments presents some interesting peculiarities as for the use of these two instruments. In particular, the political effect of the centre right government on the municipalities decisions takes opposite sign in the models for property tax rate with respect to those for surtax rate on income determination. It emerges a clear overall restraint of both the redistributive effects available by property taxation and the favour to increase the progressivity of the income taxation. As for the former municipal choice, in the period of the centre right government, the political effect moderates the average increase per year of the ordinary property tax rate with respect to the trend that would have been observed *ceteris paribus*. The effect of the redistributive policies available by means of property taxation seems to help the average restraint of the increase of the ordinary tax rate: the municipalities choosing lower ordinary rate of the property tax, *ceteris paribus*, also increase the rate for the principal residence; and the property tax deduction takes a negative sign. On the other hand, as for the municipalities' decisions on surtax rate on income, the political effect exacerbates the average increase per years

of the instrument reducing progressivity of the income taxation in the region. In other words, the local choices are taken by exploiting a form of fiscal illusion of the local electorate. Given that the local electorate is likely to consider the municipality as the direct responsible for the increase of property taxation, whereas the central government is the direct responsible of the income taxation, when the increased financial needs due to new functions require a heavier use of the local taxation, disregarding the redistributive effects, the left wing municipalities offload the responsibility onto the central government, who, by the way, was indeed the main responsible of the increased tax burden.

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### Notes

Note 1. The time period considered is also partially conditioned by the availability of data. After 1999, the Internal Stability Pact came into force imposing the monitoring of local accounts by the Minister of Internal affairs. Starting from 1998, the latter makes available the local governments' balance sheets with a lag of some years after the auditing of the accounts.

Note 2. There is by now a quite large empirical literature, which has used Italian municipalities as a testing ground for several theories concerning political economy. Most of it focuses on the characteristics of the municipal electoral system (amongst others, see Dalle Nogare and Galizzi (2009) and Fedeli and Depalo (2009)). In the context of the current paper, however, the data on the dependent variables show no peculiar peaks in the years of local election. For this reason we have not reported the results controlling for local electoral features, where the dummies for local elections result to be not significant.

Note 3. There is a wide literature on fiscal federalism. A relevant part of it studies the social optimal assignment of different functions to different levels of government following a normative approach. Part of the positive analysis studies economic and political equilibrium in determined contexts. For example, the contributions of Weisbrod (1964), Williams (1966), Oates (1972), Starrett (1980) and Gordon (1983) consider the problem of how a centralised decision making process better exploits the economies of scale for the supply of public goods and internalises the spillover across local jurisdictions in the hypothesis of a benevolent social welfare maximiser central government. Since the contributions of Tiebout (1956) and Oates (1972), a relevant part of the literature has studied how local governments better satisfy the collective preferences for public goods: the attention is often posed on location and mobility across jurisdictions. The effects from the redistributive point of view have been considered in terms of citizens movements toward other jurisdictions to take advantage of the public goods provided there (for example Dixit et al. (1998)). Other contributions analyze decentralization from the point of view of transaction costs, for example Breton and Scott (1978) and Inman and Rubinfeld (1993) or of the optimal division of powers, for example, Bednar et al. (1996). On the financing side, decentralization has been considered, from an empirical point of view, for its effects on the economic growth (see note 10) and, from a theoretical point of view, for the effects of mobility in terms of fiscal competition.

Note 4. The Italian Constitution distinguishes 3 level of local governments, other than the state. They are regions, provinces and municipalities.

Note 5. Law n.59 of 1997 on "*Delega al Governo per il conferimento di funzioni e compiti alle regioni ed enti locali, per la riforma della Pubblica Amministrazione e per la semplificazione amministrativa*".

Note 6. The same financial law for 2001 also introduced, from the year 2002, a new form of local governments' financing, called "*compartecipazione IRPEF*", addressed to a gradual substitution of central government's grants, to regions and municipalities, with a share of the personal income tax revenues to be appropriated by the Department of Internal affairs to local governments in proportion to the personal income tax paid by taxpayers fiscally living in the local government's jurisdiction. This form of financing, reaching about the 50% of the overall central grants to local government, aimed at linking the revenues of local governments to their economies, thus, giving the incentives to control local expenditures growth in those periods of bad economic cycle with low revenues from personal income tax. An equalization fund was instituted in order to solve the financial disequilibria existing among local communities (mainly those belonging to some region in the South and the smallest and mountain municipalities). This form of financing that links the revenues of local governments to their territorial economic conditions cannot be considered an improvement in terms of tax autonomy given that the local governments cannot clearly choose neither the tax basis nor the tax rate to be applied in their own jurisdiction. For the same reason, the EU itself considers the revenues from *compartecipazione IRPEF* as a form of central government grants.

Note 7. See, art. 52 of the Law of December 23rd 2000, n. 388 (Norms for the transfer of government functions, to regions and local government, and relative costs).

Note 8. In the three provinces of Bologna, Ferrara and Rimini the surtax on income was applied only after 2000.

Note 9. Under this aspect, the existing empirical analyses have often used data on specific geographical areas to verify the local variability of the tax rates as related to the disbursement for public services provided by local governments. A different important part of the literature (beginning with Oates, 1969) has been concentrated on capitalization of the tax on the value of real estate, under the assumption that the level of the public services is pre-set and there is a certain degree of discretion in the choice of tax rates (see for example Palmon and Smith, 1998).

Note 10. The empirical analysis of fiscal federalism is complicated by the presence of several dimensions of the phenomenon. For example, Davoodi and Zou (1998) notice that, in the literature, the fiscal decentralization and tax autonomy of local government are considered a remarkable component of the reforms aimed at increasing the efficiency of the public sector (because they increase competition among the lower level governments in the supply of public services and stimulate the economic growth). However, they also notice that those theories encouraging fiscal federalism and tax autonomy have a scarce empirical support, with the few exceptions of, for example, Zhang and Zou (1998), Davoodi and Zou (1998), Xie et al. (1999).

Note 11. A fixed effect model has been also estimated controlling for local dummies. The results, qualitatively very similar, are available upon request.

Note 12. We also estimated a different model where we control for local dummies, but we do not report the results because the relevant coefficients are similar. A table with the different specification is available upon request from the author.

Table 1. Distribution of the ER municipalities by provinces and by band of population

 province	Total by provinces		Band 1: <5000 abs.		Band 2: 5000-10000 abs.		Band 3: 10000-50000 abs.		Band 4: >50000 abs.		Band 5: Metropolitan municipalities	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
<b>BOLOGNA</b>	60	17.6%	29	15.9%	14	15.9%	15	25.9%	1	8.3%	1	100%
<b>FERRARA</b>	26	7.6%	12	6.6%	6	6.8%	7	12.1%	1	8.3%		
<b>FORLI'-CESENA</b>	30	8.8%	16	8.8%	9	10.2%	3	5.2%	2	16.7%		
<b>MODENA</b>	47	13.8%	21	11.5%	11	12.5%	13	22.4%	2	16.7%		
<b>PARMA</b>	47	13.8%	31	17.0%	11	12.5%	4	6.9%	1	8.3%		
<b>PIACENZA</b>	48	14.1%	38	20.9%	7	8.0%	2	3.4%	1	8.3%		
<b>RAVENNA</b>	18	5.3%	4	2.2%	7	8.0%	5	8.6%	2	16.7%		
<b>REGGIO EMILIA</b>	45	13.2%	21	11.5%	18	20.5%	5	8.6%	1	8.3%		
<b>RIMINI</b>	20	5.9%	10	5.5%	5	5.7%	4	6.9%	1	8.3%		
<b>Total</b>	341	100%	182	100%	88	100%	58	100%	12	100%	1	100%
<b>% by segment of pop.</b>		100%		53.4%		25.8%		17.0%		3.5%		0.3%

The universe of the ER municipalities according to their distribution into the 9 provinces, also distinguishing by segments of resident population

Table 2. Degree of tax autonomy/ dependence from governments' transfers of the ER municipalities

Revenues' items	Share of total revenues (%)	year	
<b>Autonomous tax revenues</b>	<b>20.20</b>	<b>1998</b>	<b>Degree of tax autonomy of the ER municipalities</b>
<b>Autonomous tax revenues</b>	<b>21.30</b>	<b>1999</b>	
<b>Autonomous tax revenues</b>	<b>21.80</b>	<b>2000</b>	
<b>Autonomous tax revenues</b>	<b>21.50</b>	<b>2001</b>	
<b>Autonomous tax revenues net of <i>compartecipazione IRPEF</i></b>	<b>22.52</b>	<b>2002</b>	
<b>Autonomous tax revenues net of <i>compartecipazione IRPEF</i></b>	<b>21.33</b>	<b>2003</b>	
<b>Autonomous tax revenues net of <i>compartecipazione IRPEF</i></b>	<b>22.78</b>	<b>2004</b>	
Property tax revenues (from I.C.I.)	17.70	<b>1998</b>	
Property tax revenues (from I.C.I.)	18.60	<b>1999</b>	
Property tax revenues (from I.C.I.)	18.70	<b>2000</b>	
Property tax revenues (from I.C.I.)	18.70	<b>2001</b>	
Property tax revenues (from I.C.I.)	18.20	<b>2002</b>	
Property tax revenues (from I.C.I.)	17.80	<b>2003</b>	
Property tax revenues (from I.C.I.)	19.10	<b>2004</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )		<b>1998</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	0.10	<b>1999</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	0.60	<b>2000</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	0.90	<b>2001</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	1.70	<b>2002</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	1.70	<b>2003</b>	
Surtax on income ( <i>Addizionale IRPEF</i> )	1.90	<b>2004</b>	
<b>Compartecipazione IRPEF</b>	<b>5.78</b>	<b>2002</b>	<b>Degree of dependence from business cycle</b>
<b>Compartecipazione IRPEF</b>	<b>9.17</b>	<b>2003</b>	
<b>Compartecipazione IRPEF</b>	<b>9.32</b>	<b>2004</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>17.2</b>	<b>1998</b>	<b>Degree of dependence from governments' transfers</b>
<b>TOTAL CURRENT TRANSFERS</b>	<b>16.7</b>	<b>1999</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>15.3</b>	<b>2000</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>18.7</b>	<b>2001</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>10.7</b>	<b>2002</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>7.2</b>	<b>2003</b>	
<b>TOTAL CURRENT TRANSFERS</b>	<b>6.8</b>	<b>2004</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	15.40	<b>1998</b>	<b>State component of current transfers</b>
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	14.50	<b>1999</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	12.40	<b>2000</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	14.70	<b>2001</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	7.30	<b>2002</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	4.60	<b>2003</b>	
CURRENT TRANSFERS FROM CENTRAL GOVERNMENT	3.80	<b>2004</b>	

Notice the increase of the ratio between autonomous tax revenues and total revenues. It emerges that the degree of tax autonomy of the Italian municipalities is mainly determined by the property tax, being the surtax on income introduced only in 1999 and fully exploited by municipalities since 2002. The last introduced form of financing, called *compartecipazione IRPEF* centrally determined as a share of the personal income tax revenues of the local jurisdiction, makes the municipal finances partially depending on the economic-business cycle. The degree of dependence of municipalities' revenues from current transfers from central and regional governments is remarkably decreasing all over the period.

Table 3. Degree of tax autonomy and dependence from governments' transfers of the ER municipalities by band of population

	Year	Band 1: <5000 inh.	Band 2: 5000-10000 inh.	Band 3: 10000-50000 inh.	Band 4: >50000 inh.	Band 5: Metrop. municipality
<b>Grants from central gov. Tot. Revenues</b>	1998	20.36%	15.46%	13.02%	19.50%	18.82%
	1999	19.16%	14.40%	12.37%	20.08%	16.08%
	2000	16.58%	12.69%	11.46%	17.41%	19.41%
	2001	17.87%	15.12%	13.92%	21.98%	25.16%
	2002	13.44%	9.01%	7.69%	12.59%	10.92%
	2003	10.09%	6.36%	5.32%	7.82%	7.20%
	2004	9.38%	5.76%	5.13%	7.41%	6.95%
<b>Surtax on income revenue . Tot. Revenues</b>	1999	0.19%	0.16%	0.02%	0.28%	
	2000	0.66%	0.71%	0.42%	0.37%	1.98%
	2001	1.09%	1.22%	0.74%	0.55%	1.78%
	2002	1.49%	1.75%	1.19%	1.55%	3.58%
	2003	1.63%	1.91%	1.25%	1.50%	2.94%
	2004	1.77%	2.03%	1.45%	1.62%	3.33%
	2004	1.77%	2.03%	1.45%	1.62%	3.33%
<b>Property tax revenue . Tot. Revenues</b>	1998	16.44%	20.56%	17.78%	15.66%	21.18%
	1999	16.96%	21.36%	19.31%	17.10%	19.58%
	2000	17.05%	21.54%	20.03%	16.14%	22.95%
	2001	16.08%	20.32%	20.05%	17.32%	20.44%
	2002	15.55%	20.10%	19.09%	17.17%	20.01%
	2003	15.57%	20.04%	19.09%	17.19%	16.40%
	2004	16.66%	20.97%	20.93%	18.01%	18.66%

Revenues (as a share of total revenues) from current central government transfers, from the property tax and from the surtax on income for local government in the ER municipalities, distinguishing by 5 segments of population.

Table 4. Descriptive statistics of the variables used

Variable	Description	Obs	Mean	Std.Dev.	Min	Max
<b>ici_ord</b>	Ordinary property tax rate	2372	6.09	0.649	4	7
<b>ici_ap</b>	Special property tax rate for the principal residence	2365	5.44	0.650	0	7
<b>Property tax deduction</b>	Property tax deduction in euros	2387	102.5	32.55	0	258.2
<b>Surtax on income</b>	Surtax rate on income	2387	0.14	0.163	0	0.5
<b>CentralGrants/Tot.Expend.</b>	State current transfers on total expenditures	2387	0.12	0.078	0	0.45
<b>Political dummy (right-wing gov.)</b>	Dummy variable taking on value of 1 if the central government ruling coalition is right-wing (since 2001). It takes on value of 0 otherwise	2387	0.57	0.495	0	1
<b>Principal residence policy</b>	Dummy variable taking on value of 1 if the municipality having an ordinary property tax rate greater than the tax rate for the principal residence increases the latter with respect to previous year. It takes on value of 0 otherwise	2387	0.22	0.417	0	1
<b>Share of houses of vacation</b>	Share of houses for vacation on the total	2387	0.13	0.168	0	0.762
<b>Log local GDP</b>	Logarithm of local GDP	2387	19.26	1.071	15.5	23.823
<b>Log local GDP</b>	Logarithm of local GDP	2387	18.64	1.096	14.8	23.076
<b>GDP per capita</b>	Local GDP per capita	2387	23273.6	2713.9	17116.2	28332.1
<b>band1</b>	Dummy taking on value of 1 for municipalities with less than 5000 inh. and 0 otherwise.	2387	0.53	0.499	0	1
<b>band2</b>	Dummy taking on value of 1 if the municipality's inhabitants are between 5000-10000. It takes on value of 0 otherwise.	2387	0.26	0.438	0	1
<b>band3</b>	Dummy taking on value of 1 if the municipality's inh. are between 10000-50000. It takes on value of 0 otherwise.	2387	0.17	0.376	0	1
<b>band4</b>	Dummy taking on value of 1 for municipalities with more than 50000 inh. and 0 otherwise.	2387	0.04	0.184	0	1
<b>band5</b>	Metropolitan municipality (Bologna)	2387	0.00	0.054	0	1
<b>BO</b>	Dummy taking on value of 1 for municipalities in the province of Bologna and 0 otherwise.	2387	0.18	0.381	0	1
<b>FE</b>	Dummy taking on value of 1 for municipalities in the province of Ferrara and 0 otherwise.	2387	0.08	0.265	0	1
<b>FO</b>	Dummy taking on value of 1 for municipalities in the province of Forli' and 0 otherwise	2387	0.09	0.283	0	1
<b>MO</b>	Dummy taking on value of 1 for municipalities in the province of Modena and 0 otherwise.	2387	0.14	0.345	0	1
<b>PA</b>	Dummy taking on value of 1 for municipalities in the province of Parma and 0 otherwise.	2387	0.14	0.345	0	1
<b>PC</b>	Dummy taking on value of 1 for municipalities in the province of Piacenza and 0 otherwise.	2387	0.14	0.348	0	1
<b>RA</b>	Dummy taking on value of 1 for municipalities in the province of Ravenna and 0 otherwise.	2387	0.05	0.224	0	1
<b>RE</b>	Dummy taking on value of 1 for municipalities in the province of ReggioEmilia and 0 otherwise.	2387	0.13	0.339	0	1
<b>RI</b>	Dummy taking on value of 1 for municipalities in the province of Rimini. and 0 otherwise.	2387	0.06	0.235	0	1

Table 5. ER average property tax rates (ordinary and principal residence), property tax deduction and surtax rate on income

	ici_ord ordinary property tax rate				ici_ap "special" property tax rate for the principal residence				ici_detr level of property tax deduction (in euros)				irpef_add surtax rate on income			
	Obs	Mean (%)	Min (%)	Max (%)	Obs	Mean (%)	Min (%)	Max (%)	Obs	Mean (in euros)	Min (in euros)	Max (in euros)	Obs	Mean (%)	Min (%)	Max (%)
1998	336	5.8	4	7	155	5.2	4	6.3	215	109.1	103.3	258.2				
1999	332	5.9	4	7	166	5.2	4	6.75	332	109.0	103.3	258.2	49	0.2	0.1	0.2
2000	340	6.0	4	7	192	5.3	4	6.75	340	109.4	103.3	258.2	151	0.2	0.1	0.4
2001	341	6.0	4	7	196	5.2	4	6.5	336	109.8	103.3	258.2	196	0.3	0.1	0.5
2002	341	6.2	4	7	218	5.3	4	6.5	331	111.2	103.3	258.2	262	0.3	0.1	0.5
2003	341	6.3	4	7	242	5.4	4	6.5	331	111.0	103.3	258.2	265	0.3	0.1	0.5
2004	341	6.4	4	7	245	5.4	4	6.9	337	111.2	103.3	258.2	263	0.3	0.1	0.5
2005	341	6.5	4	7	258	5.4	4	6.9	340	111.4	103.3	258.2	285	0.3	0.1	0.5

It emerges a remarkable increase of the average ordinary property tax rate applied by the ER municipalities, as well as the increase of both average regional tax rate for the main residence and regional average surtax rate on income.

Table 6. ER distribution by band of population of the average property tax rates (ordinary and principal residence), property tax deduction and surtax rate on income

	Variable	Band 1: <5000 abs.				Band 2: 5000-10000 abs.				Band 3: 10000-50000 abs.				Band 4: >50000 abs.				Band 5: Metropolitan municipality			
		Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max
1998	ici_ord	182	5.798	4	7	86	5.912	4.5	7	57	5.831	4.5	7	10	5.68	5	6.7	1	6.4	6.4	6.4
1998	ici_ap	182	5.482	4	7	86	5.456	4	6.9	57	5.246	4	6	10	5.05	4.4	6	1	5.7	5.7	5.7
1998	ici_detr	140	109.3	103.3	258.2	51	106.9	103.3	154.9	21	114.2	103.3	180.8	3	103.3	103.3	103.3	0			
1998	irpef_add																				
1999	ici_ord	177	5.836	4	7	87	5.934	5	7	55	5.922	4.5	7	12	5.908	5	7	1	6.4	6.4	6.4
1999	ici_ap	177	5.47	4	7	87	5.42	4	6.9	55	5.269	4	6.8	12	5.183	4.2	6	1	5.7	5.7	5.7
1999	ici_detr	177	108.4	103.3	258.2	87	109.7	103.3	206.6	55	111	103.3	180.8	12	104.2	103.3	113.6	1	103.3	103.3	103.3
1999	irpef_add	35	0.19	0.1	0.2	10	0.19	0.1	0.2	3	0.20	0.2	0.2	1	0.20	0.2	0.2	0			
2000	ici_ord	181	5.964	4	7	88	6.057	5	7	58	6.026	4.5	7	12	6.042	5	6.8	1	6.4	6.4	6.4
2000	ici_ap	181	5.506	4	7	88	5.419	4	6.5	58	5.308	4	6.8	12	5.25	4.2	5.8	1	5.7	5.7	5.7
2000	ici_detr	181	108.1	103.3	258.2	88	111.1	103.3	206.6	58	111.5	103.3	161.1	12	106.3	103.3	129.1	1	118.8	118.8	118.8
2000	irpef_add	90	0.24	0.1	0.4	40	0.21	0.1	0.4	18	0.19	0.1	0.2	2	0.20	0.2	0.2	1	0.2	0.2	0.2
2001	ici_ord	182	5.999	4	7	88	6.099	5	7	58	6.065	4.5	7	12	6.15	5	6.8	1	6.4	6.4	6.4
2001	ici_ap	180	5.5	4	7	88	5.4	4	6.5	58	5.3	4	6.5	12	5.3	4.2	6	1	5.7	5.7	5.7
2001	ici_detr	180	108	103.3	258.2	88	112.5	103.3	206.6	56	111.5	103.3	180.8	11	106.6	103.3	129.1	1	118.8	118.8	118.8
2001	irpef_add	115	0.29	0.1	0.5	50	0.27	0.1	0.4	27	0.21	0.1	0.4	3	0.20	0.2	0.2	1	0.2	0.2	0.2
2002	ici_ord	182	6.114	4	7	88	6.229	5	7	58	6.308	5	7	12	6.208	5	7	1	6.4	6.4	6.4
2002	ici_ap	179	5.5	4	7	88	5.5	4	6.5	57	5.3	4	7	12	5.3	4.2	6	1	5.7	5.7	5.7
2002	ici_detr	179	108.9	103.3	258.2	86	115.8	103.3	258.2	54	112.3	103.3	180.8	12	107.2	103.3	129.1	0			
2002	irpef_add	138	0.33	0.1	0.5	71	0.29	0.15	0.5	42	0.25	0.1	0.5	10	0.22	0.2	0.4	1	0.4	0.4	0.4
2003	ici_ord	182	6.248	4	7	88	6.384	5.25	7	58	6.425	5	7	12	6.692	6.4	7	1	6.4	6.4	6.4
2003	ici_ap	176	5.57	4	7	88	5.505	4	6.8	57	5.286	4	7	12	5.396	4.8	6	1	5.7	5.7	5.7
2003	ici_detr	181	109.3	103.3	258.2	83	113.9	103.3	220.0	56	112.6	103.3	180.8	11	107.6	103.3	129.1	0			
2003	irpef_add	139	0.33	0.1	0.5	71	0.31	0.15	0.5	43	0.26	0.1	0.5	11	0.22	0.2	0.4	1	0.4	0.4	0.4
2004	ici_ord	182	6.27	4	7	88	6.44	5.25	7	58	6.43	5	7	12	6.72	6.3	7	1	6.4	6.4	6.4
2004	ici_ap	182	5.567	4	7	88	5.511	4	6.8	58	5.307	4	6.9	12	5.379	4.8	6	1	5.7	5.7	5.7
2004	ici_detr	180	109.3	103.3	258.2	87	114.7	103.3	220.0	57	112.5	103.3	180.8	12	107.2	103.3	129.1	1	118.8	118.8	118.8
2004	irpef_add	139	0.33	0.1	0.5	70	0.31	0.15	0.5	43	0.26	0.1	0.5	10	0.22	0.2	0.4	1	0.4	0.4	0.4

The average tax rates result rather diversified for segments of population. In particular, on average, the metropolitan municipality levies the highest ordinary property tax rate in the whole period, it does not apply property tax deduction in 1998, 2002 and 2003 and postpones the use of the surtax rate on income to the second year of its introduction. The municipalities of band 4 show the highest increasing pattern of the property tax rate. On average the property tax rate on principal residence, ici\_ap, and the property tax deduction, ici\_detr, are maintained almost constant

Table 7- Results from tobit estimates for the property tax rate

	<b>Model 1</b>		<b>Model 2</b>	
	Random-effects tobit regression Number of obs = 2387 Group variable (i): istat Number of groups= 341 Random effects u_i ~ Gaussian Obs per group: min=7, Avg = 7, Max = 7 Wald chi2(18)=1764.98 Log likelihood=-1297.72; Prob>chi2=0		Tobit estimates Number of obs = 2372 LR chi2(18) = 908.79 Prob > chi2=0 Log likelihood = -2257.05 Pseudo R2 = 0.1676	
Variable	Coef.	z	Coef.	z
TREND	0.123	13.960	0.142	9.190
Political dummy(right-wing gov.)	-0.071	-2.480	-0.081	-1.540
CentralGrants/TotalExpenditures (t)	-0.593	-3.550	-0.138	-0.550
Share of houses of vacation (t)	0.566	6.790	0.805	8.360
Property tax deduction (t)	-0.001	-3.600	-0.001	-3.220
Ln Local GDP	0.092	2.750	0.131	4.030
Principal residence policy (t)	0.131	6.590	0.151	4.140
Band 1	0.238	1.780	0.365	2.660
Band 2	0.191	1.710	0.381	3.210
Band 3	0.036	0.370	0.145	1.440
BO	-0.445	-5.410	-0.539	-8.020
FE	-0.568	-6.920	-0.583	-7.810
FO	-0.468	-5.260	-0.478	-6.510
MO	-0.384	-4.500	-0.510	-7.400
PA	-0.940	-10.780	-0.942	-13.820
PC	-1.120	-14.000	-1.350	-20.000
RA	-0.524	-6.170	-0.710	-8.830
RE	-0.552	-7.030	-0.790	-11.460
_cons	4.547	6.100	3.666	4.970
/sigma_u	0.521	43.39	_se	0.617345
/sigma_e	0.322	59.33		
rho	0.723	0.70		
<b>Observation summary:</b> 25 left-censored observations at ici_ord<=4 1984 uncensored observations 363 right-censored observations at ici_ord>=7	Likelihood-ratio test of sigma_u=0: chibar2(01)=1997.93 Prob>=chibar2=0			

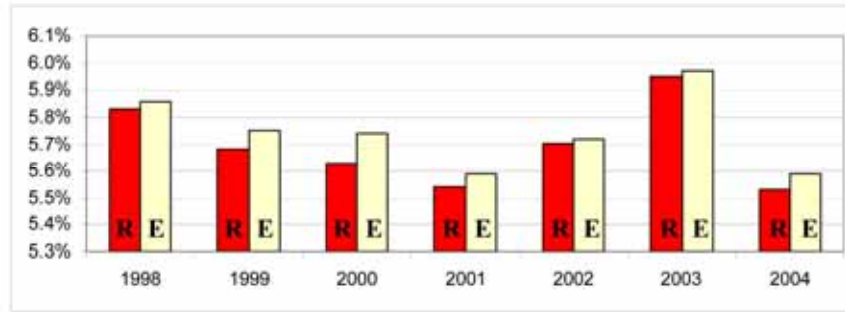
The main results of the regressions for the choice of the property tax rate are quite robust as also shown by the parameters values qualitatively and quantitatively very similar in the different specifications of the models.

Table 8. Results from tobit estimates for the surtax rate on income

	<b>Model 1</b>		<b>Model 2</b>	
	Tobit estimates Number of obs=2728 LR chi2(16) = 1627.16 Prob > chi2 = 0 Log likelihood = -642.369 Pseudo R2=0.5588		Random-effects tobit regression Number of obs = 2728 Number of groups=341 Random effects u_i ~ Gaussian Obs per group: min=8; Avg = 8; Max = 8 Wald chi2(16) = 3027.42 Log likelihood = 216.3394 Prob > chi2=0	
Variable	Coef.	t	Coef.	z
TREND	0.068	12.11	0.061	19.33
Political dummy(right-wing gov)	0.122	6.01	0.116	10.96
CentralGrants/TotalExpenditures (t-1)	0.875	9.91	0.723	14.85
CentralGrants/TotalExpenditures (t)	-0.330	-3.05	-0.244	-3.96
Per capita Local GDP (t)	0.000004	6.02	0.000004	9.71
Band 1	0.076	2.89	0.023	0.87
Band 2	0.098	3.64	0.122	4.6
Band 3	0.026	0.94	0.012	0.46
BO	-0.084	-3.56	-0.241	-12.31
FE	-0.008	-0.3	-0.109	-6.29
FO	-0.153	-5.83	-0.252	-12.74
MO	-0.184	-7.5	-0.282	-14.55
PA	0.031	1.3	-0.057	-3.2
PC	-0.104	-4.27	-0.203	-11.11
RE	-0.219	-8.82	-0.286	-13.73
RI	-0.276	-9.08	-0.363	-12.79
_cons	-0.373	-8.83	-0.196	-5.92
Fixed effects (municipality 1 to 341)				
/sigma_u			0.183	36.26
/sigma_e			0.103	46.38
rho			0.760	
_se		(Ancillary parameter)		
Observation summary: 1328 uncensored observations 1257 left-censored observations 143 right-censored observations			Likelihood-ratio test of sigma_u=0: chibar2(01)= 1717.42 Prob>=chibar2= 0	

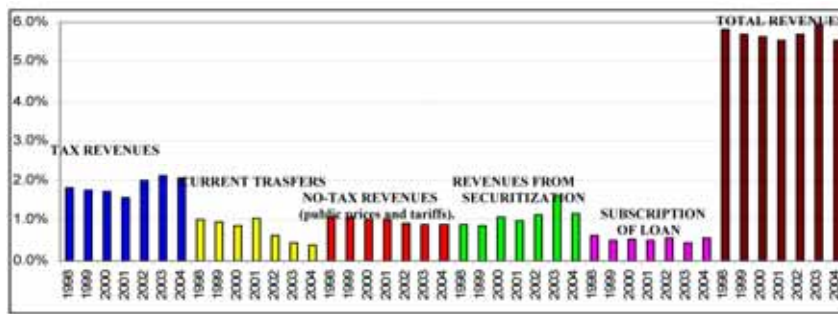
The main results of the regressions of the tobit models for the choice of surtax rate on income are quite robust as shown by the parameters values qualitatively and quantitatively very similar in the different specifications of the model.





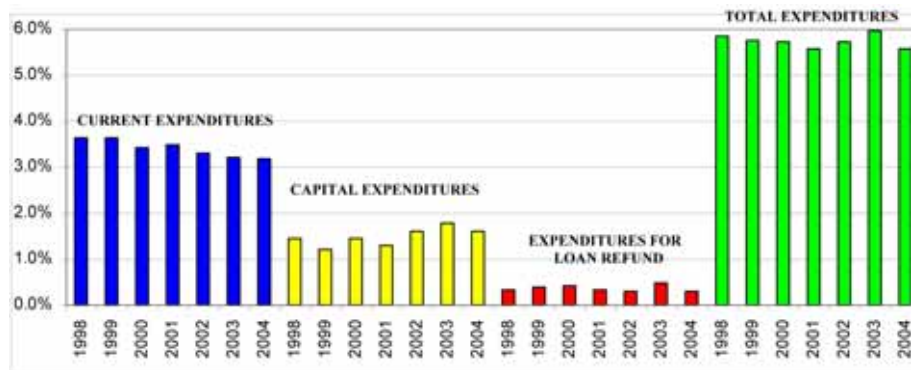
The aggregate total revenues, R, and expenditures, E, of the ER municipalities (as a share of local GDP) show an analogous course, with E only slightly higher than R.

Figure 1. Total revenues (assessments) and total expenditures (obligations) of the ER municipalities (% of local GDP)



Components of revenues (ratio to regional GDP) for the regional aggregate of all the ER municipalities. Notice a clear reduction of grants from central government beginning at the end of 2001, with tax revenues not able to fully compensate the reduction of the current transfers from the centre.

Figure 2. Levels of revenues (assessments) as a share of local GDP



Components of expenditures (ratio to regional GDP) for the regional aggregate of all the ER municipalities. The expenditure side is characterised by clear decreasing trend of the current expenditures between 1998 and 2004, which is not nearly recovered - in terms of points of GDP – by a corresponding growth of the capital expenditures required by the new functions devoluted to municipalities.

Figure 3. Levels of expenditures (obligations) as a share of local GDP