COMPLIANCE VS. ECTIVENESS: ASSESSING THE ROLE OF FISCAL RULES

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Compliance Vs. Effectiveness: Assessing the Role of Fiscal Rules*

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Abstract

One of the measure of the effectiveness of fiscal rules is their level of compliance, especially when sub-national fiscal rules are considered. However, the compliance level can be a misleading proxy for the impact of the rules, given the possibilities that fiscal rules trigger window dressing and creative finance. We use evidence from the Italian municipalities budgets, to provide a measure of the impact of subnational fiscal rules in a context in which the levels of compliance are generally very high but the status of local finance is very poor. A quasi experimental approach is allowed by the special regulation of the Italian Internal Stability Pact between 1999 and 2004.

Keywords: Fiscal Rules, Municipalities, Local Finance, Difference in Difference, Italy

JEL classification: H72, H75, H77

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1 Introduction

The role of fiscal rules has found wide interests both in the theoretic and in the empirical literature. The debate on their relevance has been wide, controversial, and has recently found new interest in the current context of the global crisis. Recent years have also witnessed the development of decentralization processes in several countries; along with this processes, a new role for fiscal rules has emerged also in subnational contexts. The need of subnational fiscal rules is even a more complex topic, both in unitary and in federal states. The goal of realizing better national budgets can be viewed as a public good by local governments: each local government may have incentive to free ride and the presence of subnational fiscal rules (imposed, agreed or contracted on) is a way of solving (or limiting) this problem. Many contributors so far have simply assumed the effectiveness of these rules, on the basis of simple political economy arguments *â la* Kydland and Prescott, but they never really assessed their effectiveness. This approach thus fails to take into account a number of serious issues. First of all, there is still a lot of disagreement on the need itself of subnational rules (Ter-Minassian [2007]); secondly, the supposed outcome of a fiscal rule can actually be endogenous, i.e., driven by local preferences for tighter fiscal policies (Braun and Tommasi [2002]). Hence, it is difficult to disentangle the impact of the rule itself on the main economic targets (e.g. debt level, expenditures etc.). Finally, this approach usually ignores that fiscal rules creates incentives to "ugly outcomes" (Milesi-Ferretti [2003]), such as window dressing and creative accounting. The latter problem is of crucial importance if one wishes to evaluate the effectiveness of subnational rules. When these rules are seen as objectives rather than instruments, simple compliance is considered a success. However this is not necessary true in many cases, when the levels of compliance can be very high but the status of local finance is definitely very poor.

Our paper aims at using Italian data to enrich the debate about subnational fiscal rules, by providing an empirical evaluation of their effectiveness. In Italy, municipalities provide compulsory education, social assistance, public security, and can plan urban development. Hence, we decided to measure the impact of Italian subnational rules as the reaction of local authorities' discretionary policies along some of these dimensions.

We focus in particular on the Italian case because, since the early '90s, the country has been interested by a wave of political reforms, granting more and more power to Regions and local authorities. More or less in the same period, starting from 1999, as a consequence of the European Union financial requirements (Stability and Growth Pact, henceforth SGP), Italian municipalities (as well as Regions and Provinces) need to meet a series of caps and constraints on their expenditures. The complex of these rules is known as Internal Stability Pact (henceforth, ISP). Each year the central government adjusts the requirements that need to be fulfilled by local authorities, which overall need to control for public spending (mainly current expenditures). Previous works have showed the high level of compliance of Regions and local governments to the ISP requirements (Patrizii, Rapallini and Zito [2005]; Giuriato and Gastaldi [2009];

Corte dei Conti [2010]) and suggest that the Pact, despite needing to be improved, may be considered a substantial success (Balassone and Franco [2001]). Moving towards an "effectiveness" approach means to start dealing with the impact of fiscal rules on local administration, taxes and expenditure decisions.

As anticipated above, we measure the impact of the ISP on several strategic dimensions, such as current expenditures and investments, fiscal and extra-fiscal revenues, property tax decisions, vertical imbalance and other transfer indicators, and level and composition of welfare expenditures. Exploiting the fact that starting from 2001 municipalities smaller than 5,000 inhabitants have been exempted from the application of the ISP, it is possible to pick up the causal effect by their changing status and to assess the role of the fiscal rule through a quasi-experimental approach.

The paper is organized as follows. In section 2 we discuss the most relevant and recent literature about fiscal rules and subnational fiscal rules. In section 3 we clarify the institutional framework of our analysis, by providing information of the ISP in Italy and on the decentralization process. In section 4 we present the methodology followed up by the descriptive statistics (section 5) and the main results (section 6). Section 7 concludes.

2 Fiscal Rules for Sub-National Governments: Theory and Evidences

The need for fiscal rules has been addressed by several authors (see, for instance, Pisauro [2001], IMF [2008, 2009a, 2009b]). Usually, rules are justified on the basis of political economy arguments, suggesting that they credibly substitute reputation and dominate discretionary and time inconsistent behaviours by governments. On the specific case of subnational fiscal rules, the debate has been extremely controversial, both in the theoretical and in the empirical field. This debate has been particularly stimulated by the greater importance recently granted from an increasing numbers of central governments to local governments. Usually the first step in the decentralization process is the devolution of spending power for delegated functions. But when local governments are granted more spending than taxing power, central governments may decide to introduce fiscal rules to prevent local autonomies from excessive spending or borrowing. This has been the case, for instance, in Mexico (Joumard [2005]) and Japan (Joumard and Yokoyama [2005]). More precisely, if the decentralization process in a country is such that vertical imbalances (or fiscal gaps) - i.e., the ratio of current expenditure which are financed through own resources - are still severe, then the scope for subnational fiscal rules is higher (Eichengreen and von Hagen [1996]; Rodden [2002]). Among theoretical contributions, additional arguments in favour of subnational rules are that local governments know they can rely on a “common pool” of state resources and have therefore the incentive to free ride on fiscal discipline (Weingast et al. [1981], Weingast [2006]), that they know they are simply “too big to fail” (Wildasin [1997]), and that private cred-

itors on the capital market will expect the central government to guarantee for the debt of its local authorities (Dafflon (eds) [2002]). Nonetheless, there is still no common agreement on the need for subnational fiscal rules. Ter-Minassian [2007] suggests that fiscal rules should be introduced only when fiscal discipline cannot be enforced by financial markets or by cooperative arrangements across governments levels. In addition, Milesi-Ferretti [2003] warns that fiscal rules may lead local governments to produce "ugly outcomes", that is creative accounting and windows dressing. He defines creative accounting as a "*measure implying the improvement of the fiscal balance* (without) *an improvement in the intertemporal budgetary position of the government sector at large*". As far as local governments are concerned, these measures may entail the transformation and transfer of their debts to banks through derivatives instruments, or the emergence of excessive out-of-the-budget debts.

Subnational fiscal rules can take very different forms: rules on budget balances (annual or multi-annual), tax limits, expenditure caps, ceilings on the own revenue of subnational entities, limits on the stock of debt or on the issuance of new debt, restrictions on the type of expenditure that can be financed with debt (golden rule), limits on the debt linked to the cost of debt service or indicators of the ability to service the debt, and finally explicit transparency requirements (Kopits [2001]; Sutherland et al. [2005]; Giuriato and Gastaldi [2009]). Usually, all these measures are jointly introduced in different combinations. Some authors have thus suggested optimal ways to design and implement these rules. Sutherland et al. [2005] note that the most common fiscal rule is the annual budget balance requirement, usually associated to the absence of guarantees by the central government over local borrowing. To get the most out of them, these rules should be tailored to the specificity of each county, they should allow sufficient planning and finally should require transparency, so to avoid creative accounting by local governments. The evaluation of the rules should be measured according to the specific objective chosen by the central government. For instance, the government may wish to ensure long-term fiscal sustainability, as it is in the case of the EU governments under the SGP, or to limit the size of the public sector, or to promote allocative efficiency in spending at the local level. In addition, Ter-Minassian [2007] suggests that balanced-budget rules should promote saving during good times and allow small deficits in bad times (or rather, should use savings in good times to avoid expenditures cuts in bad times).

An impressive collection of several international experiences is provided by Rodden, Eskeland and Litvack (eds) [2002][1]. They enrich the debate about fiscal decentralization by focusing on the risk that this process may disincetivate fiscal discipline in local governments. In particular, they explore the scope for hard budget constraints in several countries, but mainly focus on "market-like" mechanisms, such as credit markets discipline, competition for votes, land markets, and finally possible discipline imposed by owners of mobile factors. Other empirical studies focus on the experience of decentralization and discipline

[1] On soft budget constraints, see also Breullié *et al.* [2007].

in specific countries.

Broyles et al. [2009] focus on 17 OECD countries and try to test some hypothesis on the effectiveness of subnational fiscal rules, regarding expenditures reduction, the limitation of tax autonomy and debt control. Their empirical evidence does not yield conclusive evidence. Cottarelli [2009] presents initial indicators about the experience of several developing countries, whereas Braun and Tommasi [2002] analyze data from Latin American countries.

Among European countries, Spain has received a lot of attention (Joumard and Giorno [2005]; Miaja [2005]; Quintana and Torrecillas [2008] In Spain, autonomous communities became part of the Pact only from 2001: since then, their budget objective has been settled by the central government unilaterally and for the entire set of autonomies; the Fiscal and Financial Policy Council of Autonomous Communities has then to determine the individual objective for each community. The 2001 law did not take into account the contingent economic situation of the country; in addition, many Communities saw the Law as an imposition and did not fell involved in the decision making process. The law was thus reformed in 2006 and contains now the definition of a budgetary fiscal balance contingent to the business cycle, requiring surpluses in expansive phases and allowing small deficits in recessions; general objectives are still set by the Central government but after the approval of the plan but the budget objective of each Community are negotiated by the Ministry of economy and Finance and the representative of each Autonomy.

Another interesting European experience regarding a federal country is provided by Lübke [2005]. In Germany, each of the 16 Bundeslander has budget autonomy and independence. Nonetheless, Germany committed to the SGP and has had ever since to observe its requirements. Given its federal structure, Landers, municipalities and the Federation has a joint responsibility in respecting the Pact. This led to the approval of a National Stability Pact with a balanced national budget objective, to be realized through expenditure reductions at each level of government.

The common problem to all these contributions is that the evaluation of fiscal rules, and therefore the judgement on their effectiveness, is based on their compliance by local governments. In addition, they all suffer from what Braun and Tommasi [2002] define as an "endogeneity problem", that is, the fact that tighter policies may be driven by local preferences and not (only) by fiscal rules. Thus, this “compliance approach” is not sufficient. In the next section, we clarify the context and the rules where Italian local governments are acting.

3 The Italian Case Study

3.1 Hints of Municipal Finance

In 2007, proper public expenditures in Italy are almost equally divided among central expenditures (53% of total expenditures) and local expenditures (47%), that is expenditures by regions, provinces, and municipalities. But on the rev-

enues side, differences are still very high: local autonomies collect less than 18% of proper revenues (Giarda [2009] on ISTAT data). This situation is thus characterized as one where municipalities have to rely thoroughly on transfers from the central government, and where their vertical imbalance, namely the ratio between taxes revenues and current expenditures, is very low (47,6%).

The situation was not very different during our reference period (ISAE [2009]) and still in line with data from our sample.(see Appendix). Tax and fare autonomy, respectively measured as the ratio of tax revenues and fare revenues over total revenues, seem to be constant in the reference period, though they present relevant geographical differences between the north and the south of the country. As regards vertical imbalances, again, a difference between North and Centre-South of the country emerges: in the Centre and South of Italy, more than 60% of current expenditure are financed by central and regional government transfers. These municipalities have a smaller power than municipalities in the North of Italy to freely adjust their revenues and expenditures according to their needs.

Italian municipalities' activity is organized according to the TUEL, the Law for Local Authorities (L. 267/2000). The actual functions are presented by the DPR 167/1996 and are listed as follows: general administration; justice; local police; public education (up to kindergarten, primary school and part of secondary school); culture; sport; tourism; local public transportation; urban development; social sector; economic development; productive local services. The local budget is organized according to these functions and provides data on additional sub-functions. This allows a better comparison of local data, even if local budget are not always viable, especially in very small municipalities. Thus, municipalities (or groups of municipalities) basically handle the direct provision of local services. They are responsible, for instance, for the provision of crèches, care of the elderly, welfare programs at the local level, as well as street maintenance, public transportation and security, among the others. While the latter are listed as "essential services", some of the former are listed as services "upon individual demand". Usually, services "upon individual demand" are partially financed by corresponding revenues and proceeds and partially financed by other revenues, such as fiscal instruments and transfers.

Ambrosani, Bordignon and Cerniglia [2009] emphasize how, during the last 30 years, Italy has experienced a gradual process of fiscal decentralization. As it should be clear from the above data, the decentralization process has been characterized by a double speed, with the power to collect local revenues still running very low behind the power of spending. Nonetheless, from the early '90s, municipalities were assigned new local taxes. Now the main fiscal instruments of Italian municipalities are a property tax on housing (ICI) and a municipal surcharge on the personal income tax base (IRPEF surcharge). ICI is composed of two parts: a tax rate, whose range lies between 0,4% and 0,7% and which could be qualitatively differentiated, and a deduction. The discipline on ICI has been quite constant in these years (it was abolished on main domestic residences starting from 2008). On the contrary, thresholds and ability to vary the IRPEF surcharge have been subject to a number of interventions. In particular, this

instrument was introduced in 1997, when the maximum level of surcharge was 0.2% yearly (up to a maximum of 0.5% in three years). From 2003 to 2007, the surcharge was blocked (with an exception in 2005 for those municipalities where the surcharge had never been introduced). The actual upper limit is 0.8% (it was again blocked in 2009). In 2006, less than 10% of all Italian municipalities had adopted a surcharge lower than 0.2%, while almost 30% was applying the highest possible surcharge. Finally, municipalities can also rely on regional and governmental transfers. In 2005, among total own tax revenues, 61.6% is due to ICI and 8.5% is due to the IRPEF surcharge; among total current revenues, these proportions are of 23.3% and 3.2% respectively.

A further step towards fiscal decentralization was taken in 2001, with the reform of Title V of Italian Constitution, and more recently with Law 42/2009. These reforms have still to be implemented, and only in these months the government has started passing new rules for their actual application.

3.2 Internal Stability Pacts for Municipalities

The Internal Stability Pact was introduced in Italy in 1999 and has basically been changed by the central government every year through the National Budget Law. This is very important for two reasons. The first reason is that Municipalities cannot plan in advance: this is exactly due to tha fact that the ISP keeps on changing every year. The second reason is that the ISP is unilaterally defined by the central government and Municipalities have no voice in writing these rules. The Italian case is thus characterized as a unique framework, where fiscal rules can be correctly regarded as exogenous.

Table 1 summarizes the main rules of the pacts from 1999 to 2006 (see Giuriato and Gastaldi [2009], and Brugnano and Rapallini [2009] for further details). It should be stressed that the usual target has often been the budget balance, but every year some items (expenditures and/or revenues) were excluded or included.

Table 1 here

To our purpose, it is also very important observing that the number of targeted municipalities has changed in the reference period. In particular, the IPS first applied to every municipality, but from 2001 smaller cities have been exempted. First, this exemption applied to all municipalities below the 5,000 citizens thresholds; then, in 2005, it reduced only to smaller cities (below the 3,000 inhabitants); finally, the Pact set again the 5,000 threshold. The reason of these exclusions has not been made explicit by the Italian government.

Resident population is calculated as that one of two years before; e.g., for 2003, the resident population at the end of 2001 applied. As shown in Table 2, according to this criterion, the majority of the exempted municipalities are located in the North[2], even if the proportion of smaller municipalities in the

[2] We consider municipalities belonging to Ordinary Statute Regions. We exclude municipalites switching their position around the threshold in the period.

specific macro region is higher in the South.

Table 2 here

Despite the impossibility to influence the pact and the inability to plan in advance, compliance by Italian local authorities does not appear to be a problem. As a matter of the fact, Patrizii et al. [2005] show that in 2004, 96% of a sample of 98% of Provinces fulfilled the Pact, whereas the percentage of municipalities was 93% (but on smaller sample). This would suggest that the budgetary position of Italian municipalities is sound. Nonetheless, RGS [2009] describes the status of local finance as very poor and pinpoints to window dressing behaviours. Municipalities' creative accounting mainly affects two elements: out-of-budget debts and remainders (positive fares and taxes residuals). The use of out-of-budget debts allows municipalities to shadow some of their expenditures, which consequently do not result explicitly from budget certificates. As regards remainders, they refer to the possibility that municipalities have not cashed yet some of the revenues they should use to cover current expenditures. Once this practice becomes continuous in time, there emerges in the budget a share of expenditures which are only hypothetically covered and paid off: in other words municipalities end up to conver with a not-existing revenue an existing expenditure (RGS 2009).

Data from the municipalities budgets are used. Municipalities belonging to the regions with Special Statutes are excluded, given their special organization and financial structure (Galli and Grembi [2010]).

4 Methodology

Exploiting the change in policy occurred in 2001, we use difference in difference to assess the value of fiscal rules in terms of broad management of the local public spending and taxing decisions. To provide an intuition of the methodology, assume that Y_{mt} is the current expenditures for municipality m at time t: then the original DD scenario states that in the absence of a fiscal rule change, the level of current expenditure is determined by the sum of a time-invariant municipality effect and a year effect that is common across municipalities (Angrist and Pischke [2009]). If D_{mt} is a dummy for municipalities below the thresholds of the rule enforcement and time periods, then we have

$$Y_{mt} = \gamma_m + \lambda_t + \delta D_{mt} + \varepsilon_{mt} \tag{1}$$

where $\mathrm{E}(\varepsilon_{mt}|m,t) = 0$. 1. The population difference-in-differences is

$$\begin{aligned}&\{E\left[Y_{mt}|m < 5000, t >= 2001\right] - E\left[Y_{mt}|m < 5000, t <= 2000\right]\} - \\ &\quad \{E\left[Y_{mt}|m >= 5000, t >= 2001\right] - E\left[Y_{mt}|m >= 5000, t <= 2000\right]\} = \delta\end{aligned} \tag{2a}$$

where δ is the causal effect of interest (Angrist and Pischke [2009]). In other word, the population average difference over time in the control group (municipalities with more than 5000 inhabitants) is subtracted from the population average difference over time in the treatment group to remove a common trend unrelated to the intervention (Imbens and Woolridge[2009]).

The basic assumption is that the outcomes of interest would be exactly the same between the two groups but for the treatment. In order to be more consistent with such restrictive assumption we restrict the analysis to municipalities between 1000 and 9000 inhabitants (Table 3). Assuming equal outcomes in terms of spending and taxing decisions between small and very large municipalities would be otherwise inappropriate.

Table 3 here

However, DD estimators' limitations have been addressed in the literature when DD is used in panel data. Bertrand et al. [2004] coped with the bias due to serial correlation when repeated cross sections are used. For instance, the outcome variables are generally serially correlated over time. Bertrand et al. [2004] proposed a couple of simpler solutions: 1) averaging the data before and after the treatment or 2) allowing for an unrestricted covariance structure over time within the unit of interest (e.g. municipalities). The first solution, which we will follow, basically ignores the time series information. In order to do that, we need to be sure that each municipality was (not)exposed to the treatment at the same time: in other words, municipalities for which there was a change in the resident population such that they were exempted from the fiscal rules not starting from 2001, were excluded from the sample used for the regressions.

We ended up working on the sample showed in Table 3. The resident population counted with two lags from the rule year defines the exemption threshold: for the 2001 change the relevant population is at 1999. This is important since the 5000 residents threshold has been studied in other works to detect the impact that majors wage has on the municipalities' economic variables were thresholds are based on the census population (Gagliarducci and Nannicini [2009]).

5 Descriptive statistics and results

We define the outcomes of interest both with expenditures and revenues, given the ISP generally affects their joint adjustments. On the spending side, measures of current and capital expenditures are considered as well as, among the current expenditures, the entry for the social services. On the taxing decision side, revenues of both taxes and fares are analyzed, and several measures of the property taxation are considered. Controls for the municipality drivers of local finance such as, the proportion of young people, the proportion of old people, the budget rigidity (the proportion of the revenues absorbed by the staff wages and the interests on debt, which indirectly defines the margin of freedom local

authorities can have in terms of spending decisions), and the vertical imbalance. We add the values for both riassessed positive taxes and fares residuals in order to control the impact of the rules on bad practice already characterizing the Italian local authorities. Reported in Table 4 the mean values per groups before and after the 2001 policy change.

Table 4 here

As usual when DD is used we report the figures with the trend of the main outcomes on an yearly mean value. Generally speaking the figures seem to confirm the assumption required by DD estimation: the two groups have similar trends.

Figg. 1-9 here.

We show results both in two specifications. Table 5 reports the basic specification, in which δ is *treated*. We run the same model (log log specification) controlling for the amount of transfers, population characteristics, as well as budget rigidity and vertical imbalances. Financial variables are expressed in per capita terms. Results are collected in Table 6, where we control also for macro-area fixed effects.

It is apparent an impact of the fiscal rules in terms of both expenditures and taxing decisions. The DD current expenditures and taxes revenues coefficients are positive and significant, as well as the one of the property tax rate. As for the control for cheating devices- positive remainders- there seems to be a worsening behavior in terms of bad accounting behaviors: the coefficient of the riassessed positive taxes residuals is slightly significant and positive. Once municipalities are not subject to the pact anymore they tend to riassess (difference between the last year budget residuals and the "cashed" residuals during the current fiscal year) more residuals than they used to do when they were subject to the pact all other things equal.

6 Conclusive Remarks

The monitoring of the effectiveness of such constraints in a decentralized public finance framework has been often descriptive and random. Using difference in difference on Italian data, we provide an assessment of the value of fiscal rules for municipalities, given that the resident population has been used as a forcing variable by the central government, to exempt a subset of municipalities from the fiscal rule constraint.

A positive impact of the rule seems to stand from our analysis.

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7 Tables and Figures

Table 1: IPS in Italy, 1999 - 2006

Year	**Rules Targets**	**Targeted Municipalities**
1999	Budget balance (cash)	All
2000	Budget balance (cash)	All
2001	Budget balance (cash)	>5,000 residents
2002	Budget balance (cash) and current expenditures cap	>5,000 residents
2003	Budget balance (cash and accrual)	>5,000 residents
2004	Budget balance (cash and accrual)	>5,000 residents
2005	Total expenditures cap	>3,000 residents
2006	Current and investment expenditures caps	>5,000 residents

Table 2: Italian Municipalities according to the population size, 1997-2002

Macro Region	Municipalities		Total
	Over 5,000	Below 5,000	
North West	559	2403	2962
North East	415	491	906
Center	404	892	1296
South and Islands	509	966	1475
Total	1887	4752	6639

Table 3 (a): Italian Municipalities sample

Years	**1999**		**2000**		**2001**		**2002**	
Macro Regions	Between 1000 and 5,000	Between 5,000 and 9,000	Between 1000 and 5,000	Between 5,000 and 9,000	Between 1000 and 5,000	Between 5,000 and 9,000	Between 1000 and 5,000	B 5, 9,
North West	1,260	273	1,288	275	1,295	273	1,289	26
North East	420	208	426	205	425	206	424	19
Center	605	158	611	163	612	160	605	15
South and Islands	736	195	747	207	744	207	733	20
Total	3,021	834	3,072	850	3,076	846	3,051	82

Table 3 (b): Italian Municipalities sample

Years	**2003**		**2004**		**Total**	
Macro Regions	Between 1000 and 5,000	Between 5,000 and 9,000	Between 1000 and 5,000	Between 5,000 and 9,000	Between 1000 and 5,000	Between 5,000 and 9,000
North West	1,279	263	1,314	262	7,725	1,611
North East	421	185	425	181	2,541	1,181
Center	588	150	607	151	3,628	940
South and Islands	728	199	737	200	4,425	1,211
Total	3,016	797	3,083	794	18,319	4,943

Table 4: Descriptive statistics

Variable	***Control Group (mean/s.d.)***		***Treated Group (mean/s.d.)***	
	before	***after***	***before***	***after***
Taxes revenues	282,73	268,03	248,42	248,09
	152,9	146,39	145,51	146,61
Fares revenues	150,45	137,28	138,16	147,23
	171,67	143,13	140,21	357,09
Transfers and grants	196,80	193,23	258,56	252,05
	124,15	105,55	127,76	138,07
Current expenditures	598,61	556,28	596,61	602,08
	281,67	255,80	217,85	388,65
Capital expenditures	307,54	333,76	464,39	516,89
	925,40	467,13	1360,44	814,56
Ordinary property tax rate	5,69	6,03	5,54	5,85
	0,72	0,73	0,70	0,75
Main property tax rate	5,12	5,15	5,21	5,27
	0,61	0,66	0,63	0,65
Property tax allowance	110,23	111,82	108,32	109,57
	20,50	21,04	17,24	18,12
Expenditures for social services	66,60	69,69	50,06	54,63
	60,08	60,14	72,26	84,18
Municipal transfers quota	0,17	0,13	0,17	0,13
	0,11	0,13	0,12	0,10
Vertical Imbalance	0,48	0,50	0,42	0,42
	0,16	0,50	0,16	0,16
Riassessed Positive Taxes Residuals	21,67	33,27	23,10	36,13
	36,89	52,46	35,33	49,91
Riassessed Positive Fares Residuals	29,33	34,60	31,31	39,19
	62,87	65,63	60,50	78,58
Budget Rigidity	0,24	0,21	0,24	0,21
	0,07	0,06	0,08	0,07
Proportion of <=14	0,14	0,14	0,14	0,14
	0,03	0,02	0,03	0,02
Proportion of >=65	0,17	0,18	0,20	0,21
	0,04	0,04	0,05	0,05

Table 5: Basic specification

VARIABLES	Current Expenditures	Capital Expenditures	Total Expenditures	Taxes Revenues	Fares Revenues	Expenditures for Social Services
group did	0.01	0.34***	0.13***	-0.15***	0.00	-0.37***
	(1.29)	(12.44)	(8.54)	(-8.03)	(0.18)	(-12.92)
Treatment	-0.06***	0.25***	0.03	-0.03	-0.01	0.07*
	(-4.59)	(7.11)	(1.58)	(-1.48)	(-0.40)	(2.07)
Treated	0.06***	-0.01	0.05*	0.04	0.08*	0.03
	(4.06)	(-0.25)	(2.21)	(1.37)	(2.05)	(0.76)
Constant	6.33***	5.38***	6.84***	5.54***	4.66***	3.94***
	(644.55)	(219.14)	(493.97)	(339.88)	(199.25)	(156.84)
Observations	7886	7885	7886	7882	7881	7882
R-squared	0.01	0.06	0.03	0.01	0.00	0.04
F test	18.53	173.87	88.99	33.84	6.26	113.80
Adj Rsq	0.00663	0.0617	0.0324	0.0123	0.00200	0.0412

*** p<0.001, ** p<0.01, * p<0.05; t statistics in parentheses

Table 5: Basic specification

VARIABLES	Ordinary Property Tax Rate	Main Property Tax Rate	Property Allowance	Riassessed Positive Taxes Residuals	Riassessed Positive Fares Residuals
group did	-0.03***	0.02***	-0.02**	0.12*	0.04
	(-5.24)	(3.59)	(-3.29)	(2.19)	(0.62)
Treatment	0.06***	-0.00	0.01*	0.45***	0.29***
	(9.52)	(-0.26)	(2.24)	(6.51)	(3.55)
Treated	-0.00	0.01	-0.00	0.14	0.05
	(-0.67)	(0.85)	(-0.46)	(1.86)	(0.56)
Constant	1.73***	1.63***	4.69***	2.26***	2.28***
	(389.21)	(383.54)	(1102.10)	(46.32)	(38.72)
Observations	7760	7685	7840	7727	7700
R-squared	0.05	0.00	0.01	0.04	0.01
F test	145.69	12.55	13.96	112.50	25.87
Adj Rsq	0.0530	0.00449	0.00493	0.0415	0.00960

*** p<0.001, ** p<0.01, * p<0.05; t statistics in parentheses

Table 6 (a): Specification with controls

VARIABLES	Current Expenditures	Capital Expenditures	Total Expenditures	Taxes Revenues	Fares Revenues
group did	-0.06***	0.14***	-0.00	-0.06***	-0.07**
	(-6.17)	(7.65)	(-0.40)	(-5.82)	(-2.94)
Treatment	-0.13***	0.04	-0.11***	-0.14***	-0.13***
	(-10.73)	(1.52)	(-8.09)	(-11.27)	(-4.60)
Treated	0.06***	-0.00	0.05***	0.06***	0.02
	(4.20)	(-0.03)	(3.33)	(4.68)	(0.77)
Young	-0.40***	0.12*	-0.25***	-0.41***	-0.66***
	(-13.88)	(2.27)	(-8.21)	(-13.98)	(-9.64)
Old	0.04	0.58***	0.25***	0.04	0.12*
	(1.93)	(15.02)	(11.76)	(1.94)	(2.51)
Transfers	0.28***	0.47***	0.38***	0.25***	-0.21***
	(22.55)	(20.17)	(28.97)	(20.31)	(-7.13)
Income	0.43***	0.02	0.29***	0.42***	0.87***
	(16.34)	(0.35)	(10.36)	(15.98)	(14.17)
Budget rigidity	-0.18***	-1.74***	-0.88***	-0.17***	-0.46***
	(-17.54)	(-92.30)	(-82.81)	(-16.54)	(-19.28)
Vertical Imbalance	-0.02	0.28***	0.09***	0.96***	-0.83***
	(-1.72)	(13.18)	(7.29)	(84.90)	(-31.48)
Constant	-0.22	1.52**	0.74**	-0.04	-4.84***
	(-0.81)	(3.04)	(2.61)	(-0.17)	(-7.71)
Macro Areas Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	7858	7857	7858	7858	7857
F test	249.89	1033.87	979.20	1797.72	266.81
Adj Rsq	0.275	0.612	0.599	0.733	0.289
R-squared	0.28	0.61	0.60	0.73	0.29

** p<0.001, ** p<0.01, * p<0.05; t statistics in parentheses

Table 6 (b): Specification with controls

VARIABLES	Expenditures for Social Services	Ordinary Property Tax Rate	Main Property Tax Rate	Property Allowance
group did	-0.44***	-0.02***	0.01	-0.01
	(-17.27)	(-4.78)	(1.18)	(-1.83)
Treatment	-0.04	0.05***	0.00	0.01
	(-1.32)	(8.44)	(0.40)	(1.93)
Treated	0.01	0.00	0.01	-0.00
	(0.24)	(0.16)	(1.55)	(-0.24)
Young	-0.61***	-0.06***	-0.02	-0.03*
	(-8.29)	(-4.38)	(-1.45)	(-2.16)
Old	-0.07	-0.03**	0.01	-0.03**
	(-1.37)	(-2.78)	(0.68)	(-2.68)
Transfers	0.44***	0.10***	0.07***	0.02*
	(14.00)	(16.70)	(10.72)	(2.52)
Income	1.00***	0.04**	-0.04**	-0.01
	(15.11)	(2.99)	(-3.11)	(-0.66)
Budget rigidity	-0.09***	0.01*	0.03***	-0.01**
	(-3.42)	(2.22)	(5.76)	(-2.83)
Vertical Imbalance	-0.20***	0.15***	0.07***	0.05***
	(-7.12)	(28.23)	(13.25)	(8.70)
Constant	-9.44***	0.77***	1.74***	4.59***
	(-13.93)	(5.90)	(13.18)	(34.30)
Macro Areas Fixed Effects	Yes	Yes	Yes	Yes
Observations	7858	7739	7663	7818
F test	291.35	139.93	32.10	14.69
Adj Rsq	0.307	0.177	0.0464	0.0206
R-squared	0.31	0.18	0.05	0.02

** p<0.001, ** p<0.01, * p<0.05; t statistics in parentheses

Table 6 (c): Specification with controls

VARIABLES	Riassessed Positive Taxes Residuals	Riassessed Positive Fares Residuals
group did	0.06	-0.10
	(1.12)	(-1.56)
Treatment	0.38***	0.17*
	(5.73)	(2.20)
Treated	0.17*	0.04
	(2.44)	(0.44)
Young	-0.11	-0.24
	(-0.72)	(-1.26)
Old	0.13	0.36**
	(1.17)	(2.70)
Transfers	0.45***	0.22**
	(6.75)	(2.76)
Income	0.25	0.82***
	(1.80)	(4.84)
Budget rigidity	-0.17**	-0.31***
	(-3.17)	(-4.78)
Vertical Imbalance	0.70***	-0.32***
	(11.72)	(-4.40)
Constant	-2.54	-7.71***
	(-1.80)	(-4.48)
Macro Areas Fixed Effects	Yes	Yes
Observations	7703	7676
F test	156.65	124.07
Adj Rsq	0.195	0.161
R-squared	0.20	0.16

** p<0.001, ** p<0.01, * p<0.05; t statistics in parentheses

Figure 1

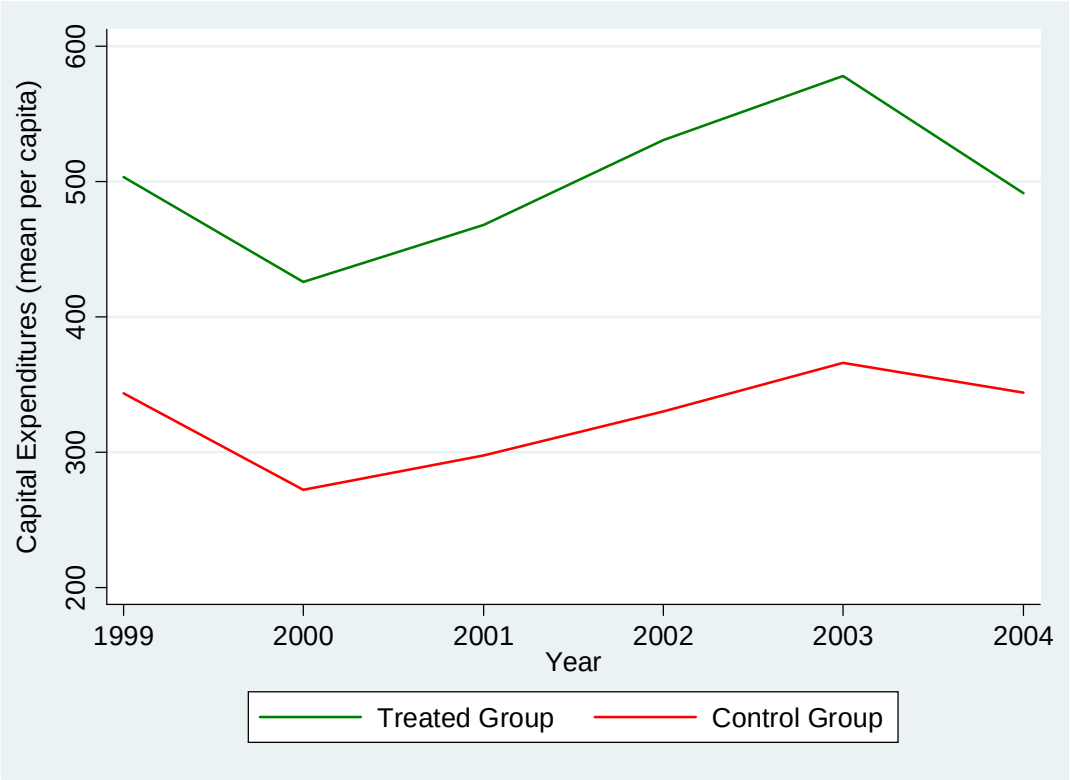

Capital Expenditures (mean per capita)
200
300
400
500
600
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 2

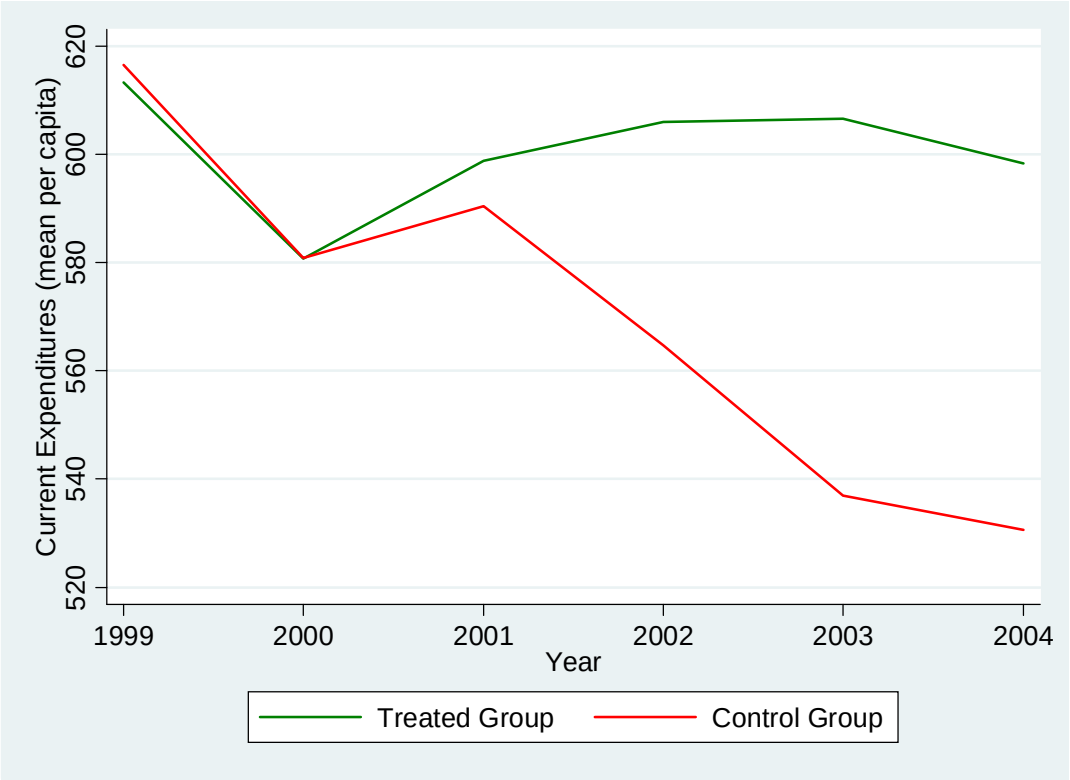

Current Expenditures (mean per capita)
520
540
560
580
600
620
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 3

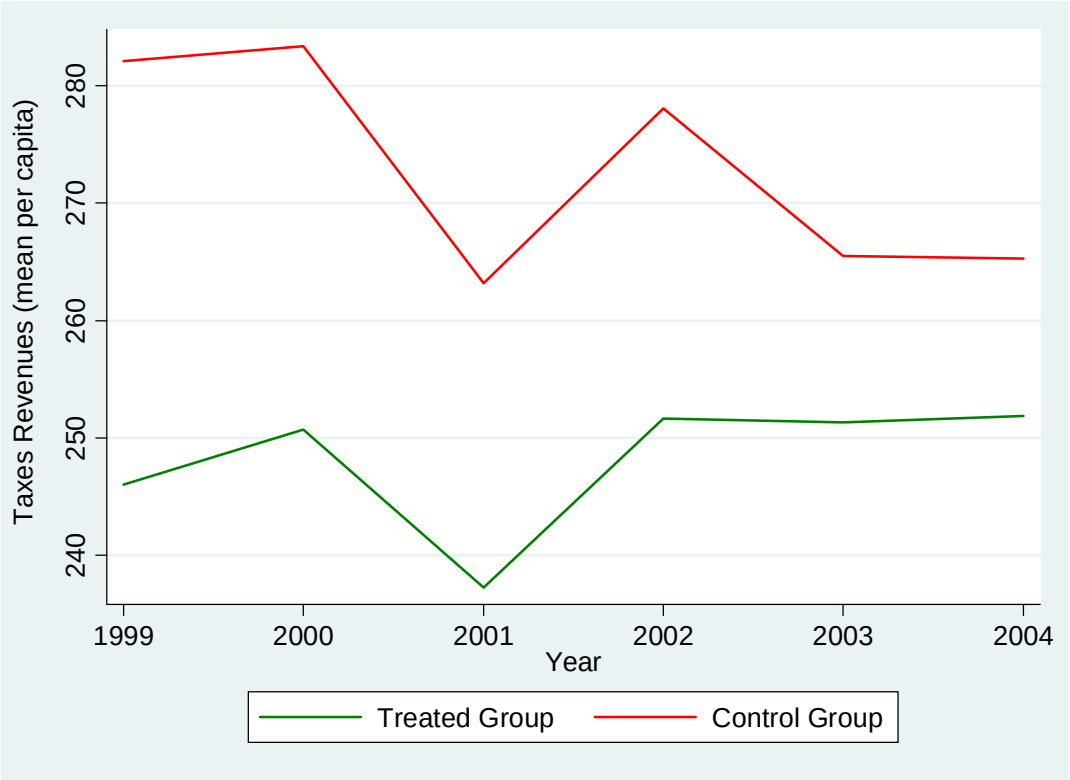

Taxes Revenues (mean per capita)
240
250
260
270
280
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 4

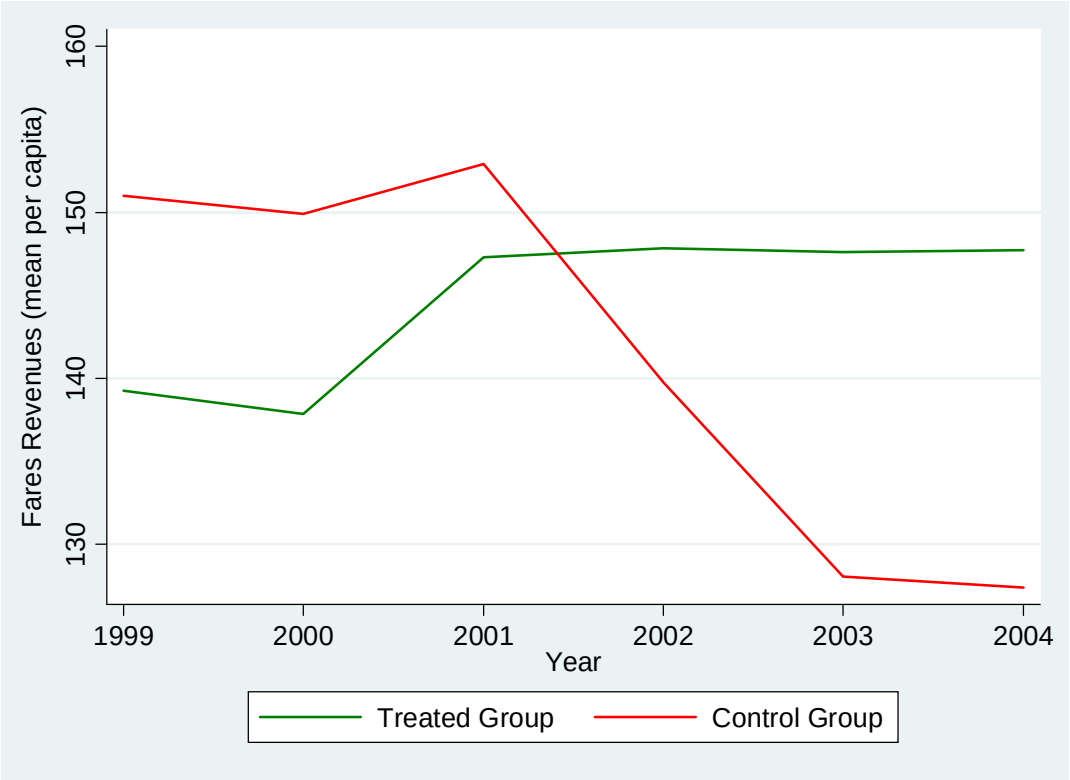

Fares Revenues (mean per capita)
160
150
140
130
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 5

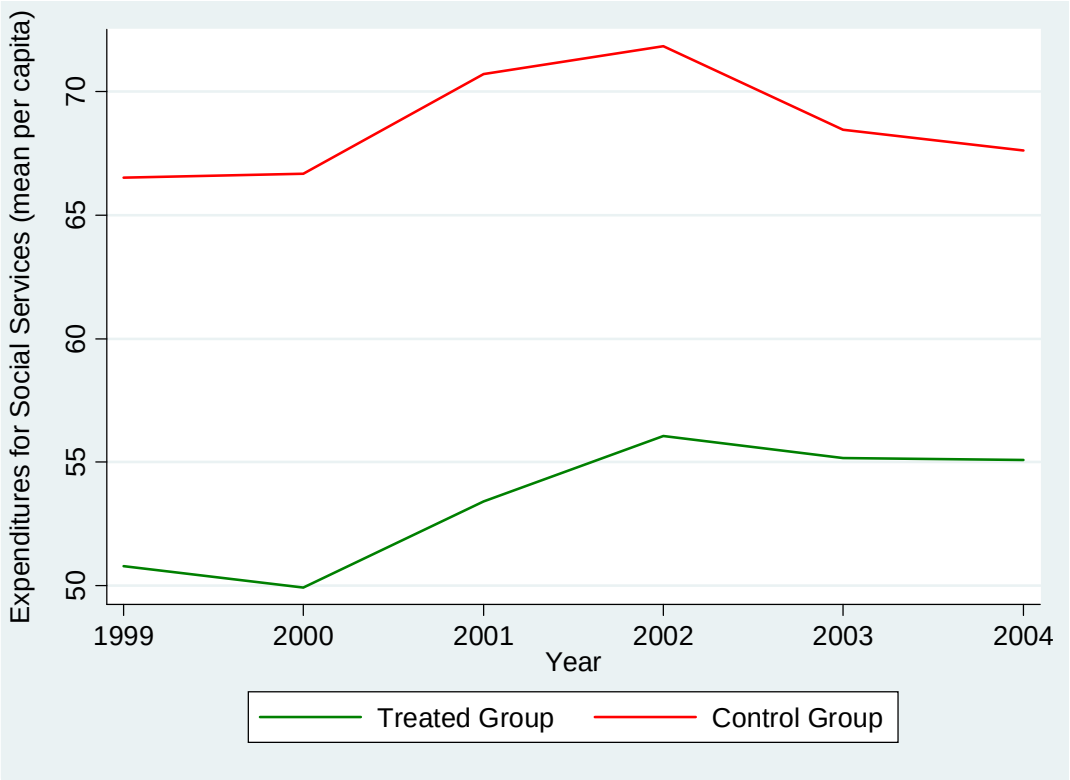

Expenditures for Social Services (mean per capita)
50
55
60
65
70
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 6

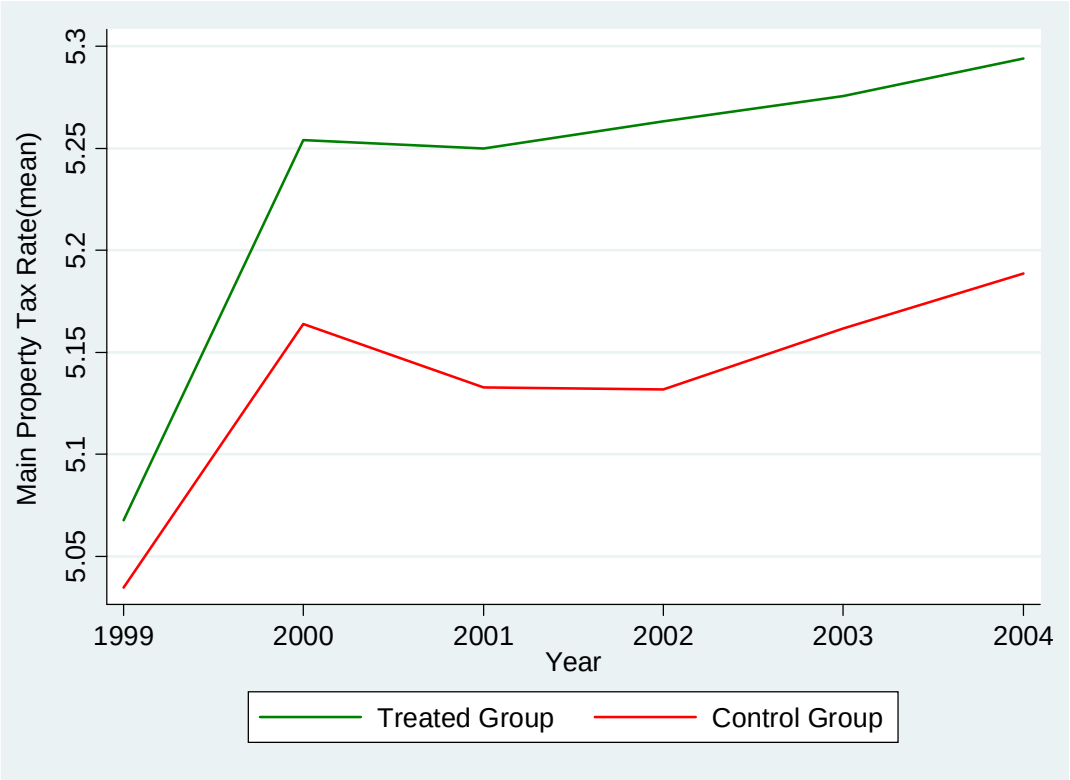

Main Property Tax Rate(mean)
5.05
5.1
5.15
5.2
5.25
5.3
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 7

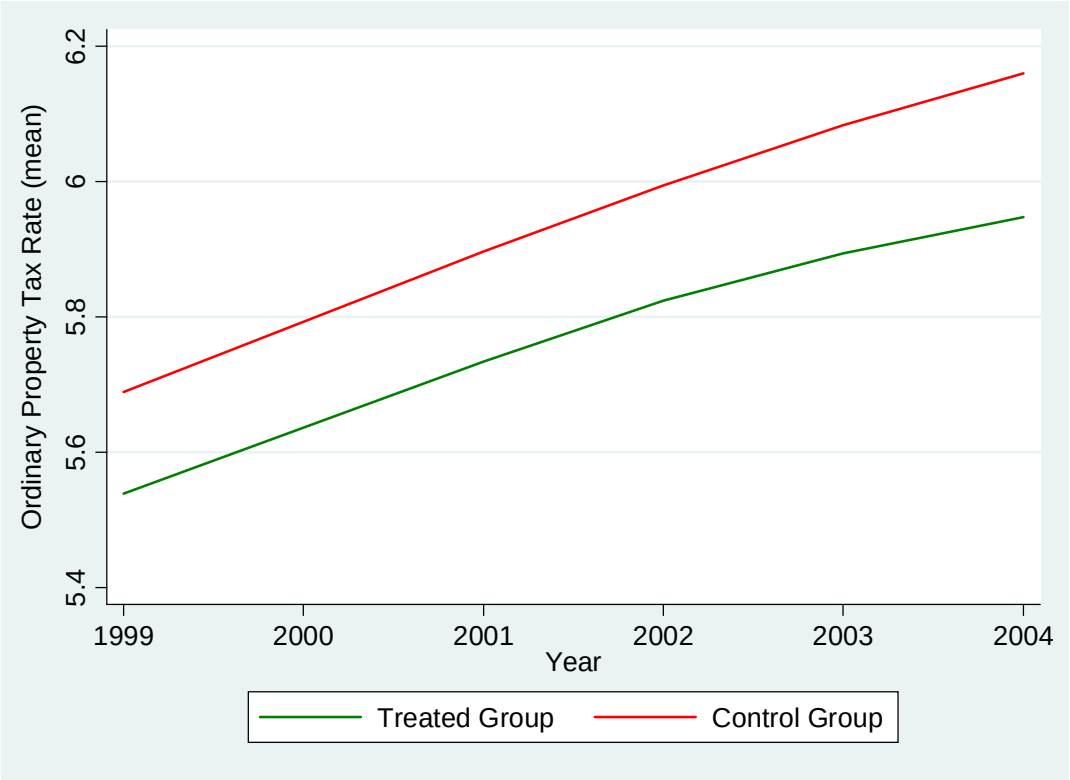

Ordinary Property Tax Rate (mean)
5.4
5.6
5.8
6
6.2
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 8

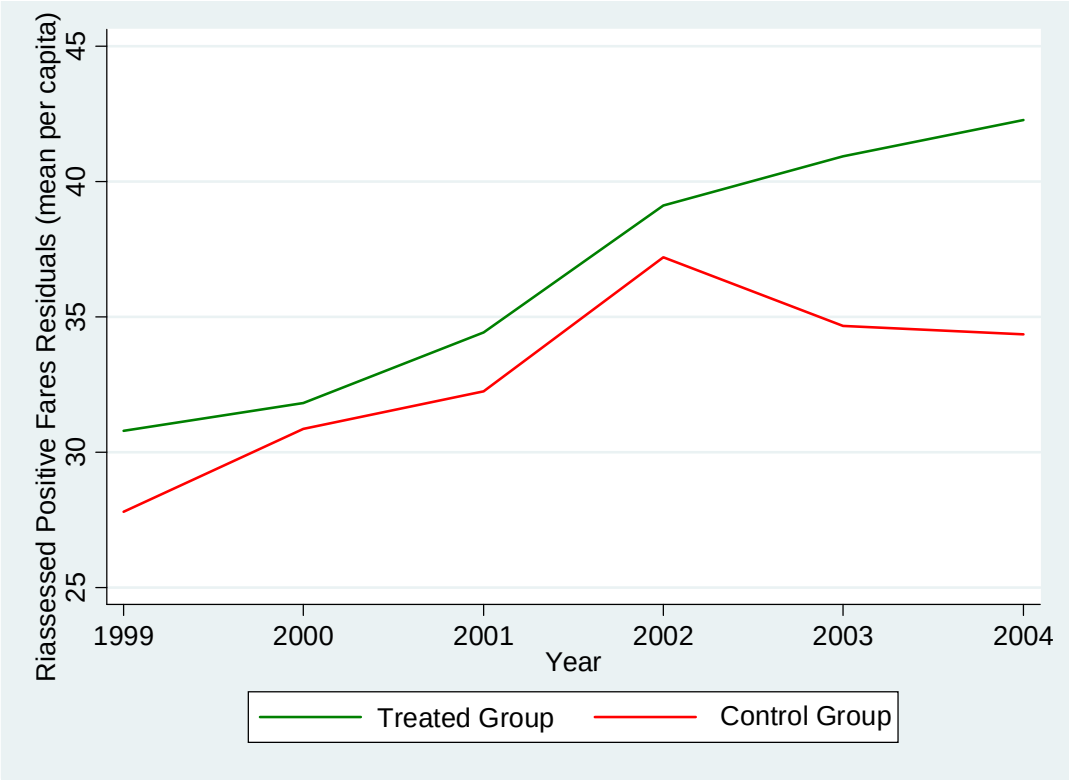
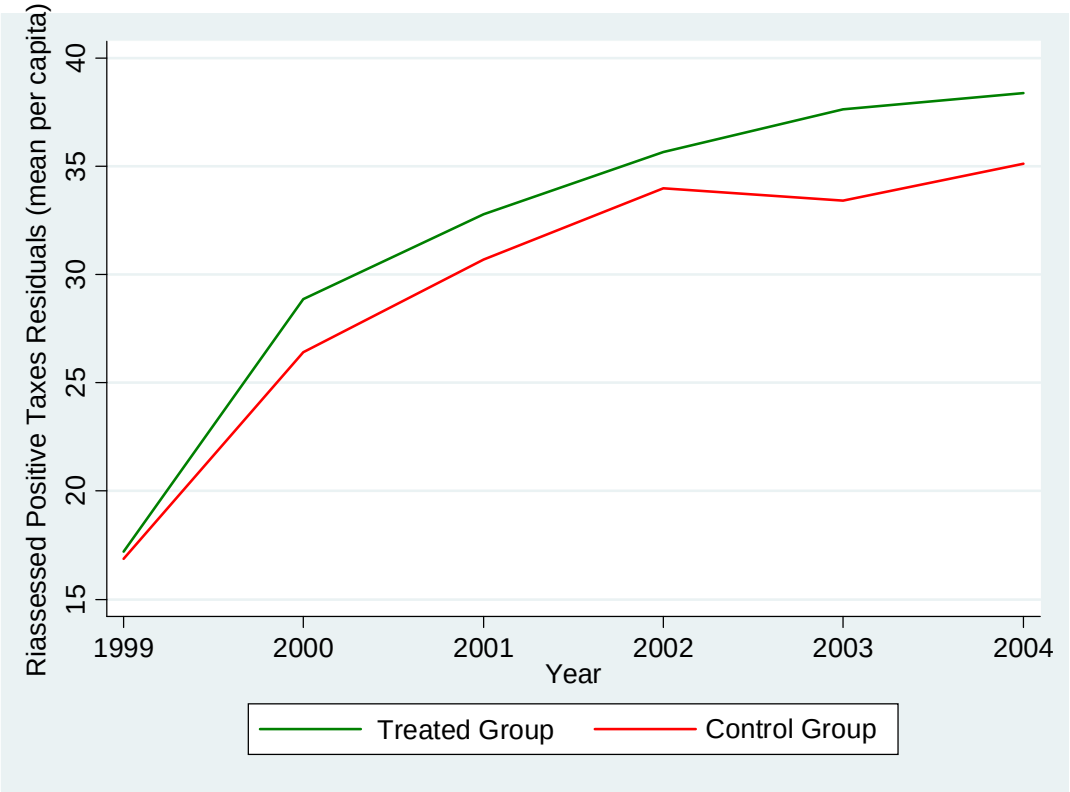

Riassessed Positive Fares Residuals (mean per capita)
25
30
35
40
45
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

Figure 9


Riassessed Positive Taxes Residuals (mean per capita)
15
20
25
30
35
40
1999
2000
2001
2002
2003
2004
Year
Treated Group
Control Group

8 Appendix

Taxes Autonomy

mreg	1999	2000	2001	2002	2003	2004	2005	2006	Total
North West	0.46	0.48	0.44	0.47	0.46	0.48	0.49	0.49	0.47
North East	0.47	0.49	0.45	0.47	0.46	0.47	0.49	0.49	0.47
Center	0.35	0.38	0.35	0.37	0.37	0.39	0.41	0.41	0.38
South and Islands	0.25	0.28	0.27	0.28	0.29	0.30	0.31	0.32	0.29
Total	0.39	0.41	0.38	0.40	0.40	0.42	0.43	0.43	0.41

Fares Autonomy

mreg	1999	2000	2001	2002	2003	2004	2005	2006	Total
North West	0.22	0.23	0.23	0.22	0.22	0.23	0.23	0.24	0.23
North East	0.20	0.21	0.21	0.20	0.20	0.21	0.22	0.22	0.21
Center	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.21
South and Islands	0.14	0.15	0.15	0.15	0.16	0.17	0.18	0.18	0.16
Total	0.19	0.20	0.21	0.20	0.20	0.21	0.21	0.22	0.21

Grants Quota

mreg	1999	2000	2001	2002	2003	2004	2005	2006	Total
North West	0.32	0.29	0.32	0.31	0.32	0.30	0.28	0.27	0.30
North East	0.33	0.30	0.34	0.33	0.34	0.31	0.30	0.29	0.32
Center	0.45	0.42	0.44	0.42	0.41	0.39	0.38	0.37	0.41
South and Islands	0.61	0.56	0.58	0.57	0.55	0.53	0.51	0.50	0.55
Total	0.42	0.38	0.41	0.40	0.40	0.37	0.36	0.35	0.38

Vertical Imbalance (taxes rev/current expentitures)

mreg	1999	2000	2001	2002	2003	2004	2005	2006	Total
North West	0.50	0.53	0.48	0.52	0.51	0.51	0.54	0.53	0.51
North East	0.50	0.53	0.48	0.51	0.51	0.51	0.53	0.53	0.51
Center	0.37	0.40	0.37	0.40	0.40	0.41	0.43	0.43	0.40
South and Islands	0.26	0.30	0.28	0.30	0.36	0.31	0.33	0.33	0.31
Total	0.42	0.45	0.41	0.44	0.45	0.44	0.46	0.46	0.44