Does Local Government Cooperation promote efficiency gains? Evidence from Italian Municipal Unions

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Motivation I

- In the last 50 years municipalities across Europe have been affected by economic and government budget challenges
- $\longrightarrow$ pressure on performances in terms of efficiency, effectiveness and quality of public services.

Two issues:

1. general increase in the demand of public goods
   - Citizens more conscious and demand more skilled set of public goods, and higher accountability than in the past.
2. stricter public finance requirements imposed by EU to local governments
   - $\longrightarrow$ municipalities had to reduce their expenditures.

Motivation II

Consequence:

- difficulties for small municipalities to meet the demands of local public goods while reducing their expenditure
- territorial scale no longer compatible with the increasing scale of production required to provide efficiently high standard level of public services

Possible solutions: to rethink service delivery of services through new different institutional tools

- amalgamation of municipalities
- inter-municipal cooperation.

Municipal amalgamation

- Compulsory merging of neighbouring borders and creation of new entities.
- Aim to reduce the number of units of sub-national governments,
- and to achieve efficiency gains, from both the exploitation of economies of scale
  - larger area can be served after the agreements,
- internalisation of externalities (Oates, 1972; Case et al., 1993).

However, the municipal amalgamation is often difficult to achieve, especially due to political resistance of the local policy maker to merge (Mello and Lago-Penas, 2013).

Inter-municipal cooperation

- Governance structure where municipalities reciprocally cooperate
- to provide a wide range of public services or organize service delivery between partners.
- Municipalities can transfer their own decision-making powers on some public services to a standing organization.
  - $\longrightarrow$ new entity which provides only the transferred public services.
- Thus municipalities can co-operate without being replaced by the standing organization.

- Inter-municipal cooperation is a more flexible solution than amalgamation (Dollery et al., 2006; Feiock and Scholz, 2009; Mello and Lago-Penas, 2013; Blaeschke, 2014)
- Municipalities can maintain, on their own territory, local political representatives
- and decide on their own fiscal policy.

Literature Review I

- Saarimaa and Tukiainen (2015), using Finnish data, find that municipalities, before amalgamation, shift part of the costs of additional expenditures to the future partners
  - $\longrightarrow$ increasing debt or liquidating assets.
- Fritz and Feld (2015) also observe higher debt dynamics for a sample of amalgamated German municipalities, in particular
  - if the number of amalgamated municipalities increases,
  - and if municipalities are either forced to merge or annexed.

Literature Review II

- Many empirical works on the determinants of the inter-municipal cooperation.
- In particular, they find that relevant factors in favour of inter-municipal cooperation are
  - size of municipalities (Brasington, 2003; Carr et al., 2007)
  - regional characteristics (Feiock, 2007; LeRoux and Carr, 2007)
  - geographic factors (Morgan and Hirlinger, 1991; Post, 2002)
  - fiscal revenue (Di Porto et al., 2013)
  - spatial proximity of municipalities (Di Porto et al., 2016)

Literature Review III

- Few studies on the impact of inter-municipal cooperation on socio-economic variables and
- no studies that empirically explore the ex-post impact of the inter-municipal cooperation on both financial and service outcomes.
- The aim of this paper is to fill this gap in the literature, by studying the causal impact of inter-municipal cooperation on local spending and on the provision of the local public services.

Our work

- We investigate the Italian experience in the inter-municipal cooperation process which starts in 1990 with the institution of the Municipal Union (Unione dei Comuni).
- We use unique administrative data on municipalities in the region Emilia Romagna over the period 2001-2011.
- By exploiting the different timing in entering/forming Municipal Unions, we employ difference-in-differences models to identify the causal effect of the inter-municipal cooperation.
- We adopt parametric and non-parametric difference-in-differences matching models to control for several sources of sample bias.

Main findings

- Being a member of a Municipal Union reduces total current per-capita expenditures by around 5%, compared to municipalities not in a Union.
- We find that the expenditure reduction is consistent and increasing up to nine years after joining a Municipal Union.
  - $\Longrightarrow$ persistency of the policy effect.
- Results robust to a large number of checks
- We also find that spending cuts are not associated with a downsizing of local services, which confirms that the Union is effectively increasing municipalities efficiency.

Institutional framework I

- In Italy, 8,000 municipalities and, approximately 70% of them have a population lower than 5,000 inhabitants.
- The Law 142/1990 has formally introduced the inter-municipal cooperation.
- Municipalities can transfer their own decision-making powers, in terms of expenditure decisions, to a standing organization called Unione di Comuni.
- Municipalities transfer the money related to the public function(s) they want to share, and the Union provides the corresponding service(s).

Institutional framework II

- Union is a legal entity,
  - with its own balance sheet,
  - its own president chosen among the mayors of municipalities joining the Union
  - its own council composed by the council members of cooperating municipalities.
- Each municipality can be member of only one Union.
- The functions commonly transferred are: Administration and Management, Municipal police, Education, Roads & Transport Services, Planning and Environment and Social welfare.

Institutional framework III

- Municipalities can also transfer Economic development, In-house production services, Culture, Sport and Tourism.
- Each region, through its own law, can stimulate and promote Municipal Unions within its territory, by means of regional transfers.
- Some region used financial incentives (Veneto, Toscana and Emilia Romagna).
- Lombardia has created a special register of Municipal Unions (Unioni di Comuni Lombardi), such that only registered municipalities have access to regional transfers.

Municipal Unions total expenditure

- In 2007 total expenditures of Municipal Unions about 0.10% (403 millions of euro) of total local expenditures in Italy (350 billions of euro).
- In 2013, the total expenditures of Municipal Unions more than doubled, 0.30% (970 million of euro) of the total local expenditures in Italy (334 billion of euro).
- Revenues of Municipal Unions: transfers from municipalities within the Union and transfers from State and regional governments.

Empirical Approach

- The organisation process of Municipal Unions has not been homogeneous across regions in Italy, and over time (during the period of our analysis 2001-2011).
- Municipalities in Unions located in different regions are not properly comparable
  - $\Longrightarrow$ we cannot identify a unique (aggregate) effect of the policy on local expenditures.
- Analysis restricted to Emilia Romagna: one of the richest and more populated Italian region
  - average population of about 4 million inhabitants over the period 2001-2011 (approximately 7.50% of the Italian population)
  - average GDP, over the same period, is 116 billion euros (approximately 9% of the Italian GDP).
  - inter-municipal cooperation is a widespread phenomenon: number of Municipal Union has noticeably increased.

Data

Combination of different archives from

- Italian Ministry of the Interior,
- the Italian Ministry of Economy
- and the Italian Institute of Statistic.

Information on:

- municipal financial data
- municipal demographic and socio-economic data: total current expenditures, population size, age structure, average income of inhabitants.

In Emilia Romagna

- 348 municipalities for the period 2001-2011
- we exclude Bologna, a Metropolitan Area with a wider range of services

Final sample:

- 335 municipalities, over the period 2001-2011
- a total of 3,686 observations.

Data definition and sources

Variable	Definition and measure	Available from-to	Source
Log expenditure	Log of current expenditure per resident; 2011 Euros	2001-2011	Italian Ministry of Interior
Municipal Union	Dummy variable that takes on the value one if municipality i at time t belongs to a Municipal Union and zero otherwise.	2001-2011	Italian Ministry of Interior
Birth rate per capita	birth rate per capita	2001-2011	ISTAT
Number of childre enrolled in infant s	Number of childre enrolled in infant school (per-capita)	2004-2011	ISTAT
Net migration	Difference between new regsitred members and unregistered members	2002-2010	ISTAT
Per capita road car crash	Number of accients within the muncipal roads	2001-2011	ISTAT
Taxpayers	share of the taxpayesr of the municipality	2001-2011	Italian Ministry of Economy, Department of Finance
population	Population of the municipality	2001-2011	ISTAT
child	Share of the population aged between 0-5	2001-2011	ISTAT
old	Share of the population over the age of 65	2001-2011	ISTAT
population density	Numbers of citizens per area	2001-2011	Our computation
income	Real personal income tax base per resident; 2011 Euros	2001-2011	Italian Ministry of Economy, Department of Finance
1/population	inverse of the population	2001-2011	Our computation
Revenue of Muncipal Unions	Sum of the revenue from fees and charges and transfers from other level of governmenrs per resident; 2011 Euros	2001-2011	Italian Ministry of Interior
Permanence	Number of years joining the Municpal Union	2001-2011	Our computation
Permanence square	Square of number of years joining the Municpal Union	2001-2011	Our computation

Descriptive statistics

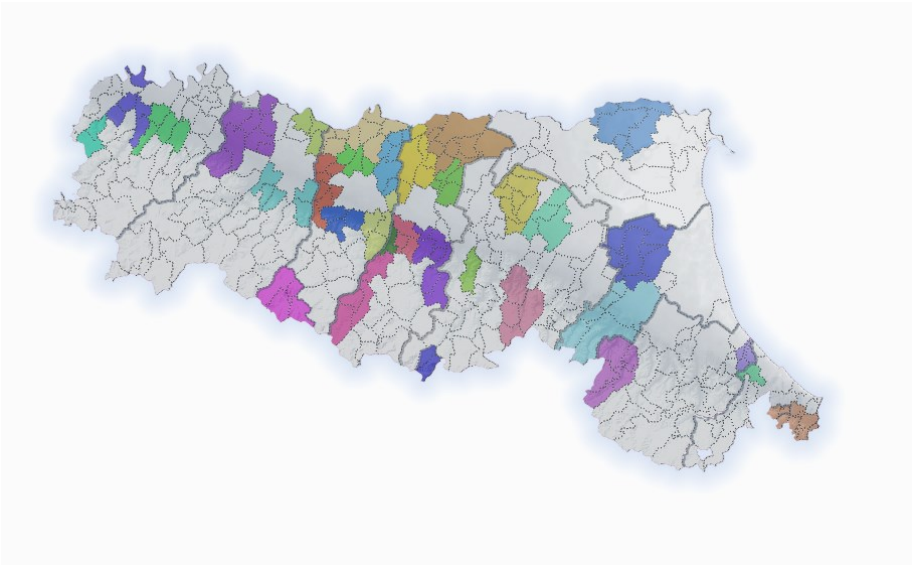
Table: Municipalities in Unions in Emilia Romagna 2001-2011

Variables	Obs	Mean	Std. Dev.	Min	Max
Log expenditure	3686	6.663	0.287	5.733	8.329
Municipal Union	3784	0.196	0.397	0.000	1.000
Population	3686	11419.580	23150.210	91.000	186690.000
Child	3686	0.051	0.013	0.000	0.083
Aged	3686	0.238	0.066	0.120	0.638
Income	3686	13223.430	2086.341	5425.244	20525.250
Population density	3686	0.017	0.025	0.000	0.275
Taxpayers	3686	0.706	0.099	0.324	1.083
1/population	3686	0.000	0.001	0.000	0.011
Revenue of Municipal Unions	3684	11.198	37.796	0.000	321.683
Permanence	3784	0.587	1.812	0.000	15.000
Permanence square	3784	3.627	16.803	0.000	225.000
Birth rate per capita	3686	0.009	0.003	0.000	0.027
N. children in infant school pc	2351	0.024	0.007	0.000	0.061
Net migration	3784	41.461	121.474	-1773.000	1366.000
Per capita road car crash	3592	0.004	0.003	0.000	0.024

Figure: Emilia Romagna municipalities - 2001

- Only one MU, including 9 municipalities and serving 20,767 inhabitants, around 1% of the regional population.

Figure: Emilia Romagna municipalities - 2011

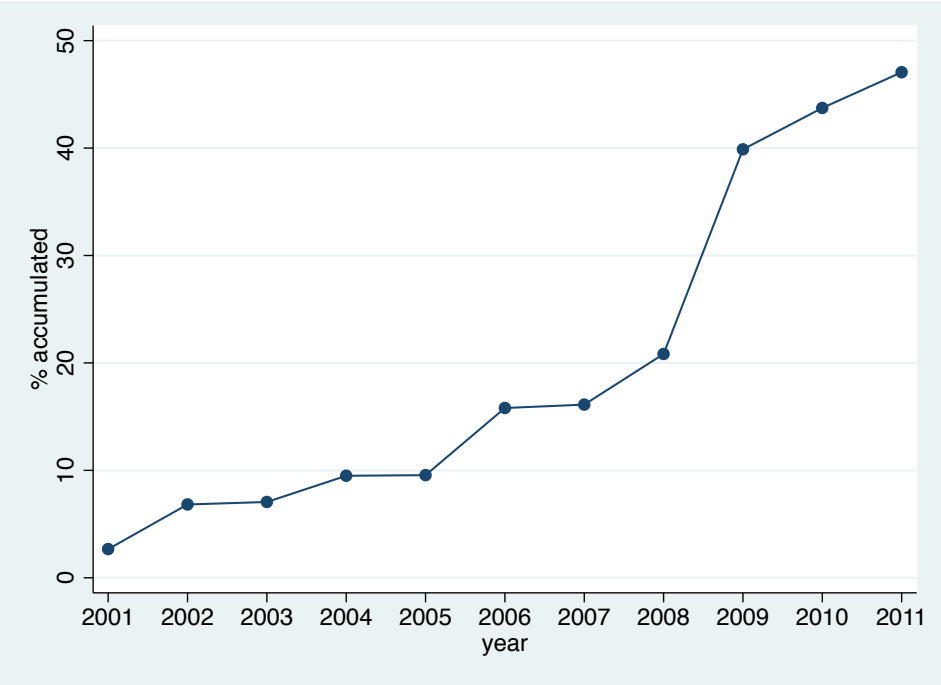


- 31 MU, over 160 municipalities and 1.5 million of inhabitants, that is 34% of the total population of Emilia Romagna.

Structure of Municipal Unions

- On average 5 municipalities per Union (from a minimum of 2 to a maximum of 10)
- and average population of Union is 43,000 inhabitants.
- Emilia Romagna approved the LR 2008, n.10 aiming at rationalising public expenditures through a reorganisation of its territory.
  - transformed mountain communities in MU
  - encouraged municipalities to form Unions, giving direct financial incentives.

Figure: Percentage of municipalities in union



- The rate of participation of municipalities in Municipal Unions is less than 20% until 2007
- striking increase from 2008, reaching almost 50% by the end of the decade
- by 2016 the percentage of municipalities in unions is 81%

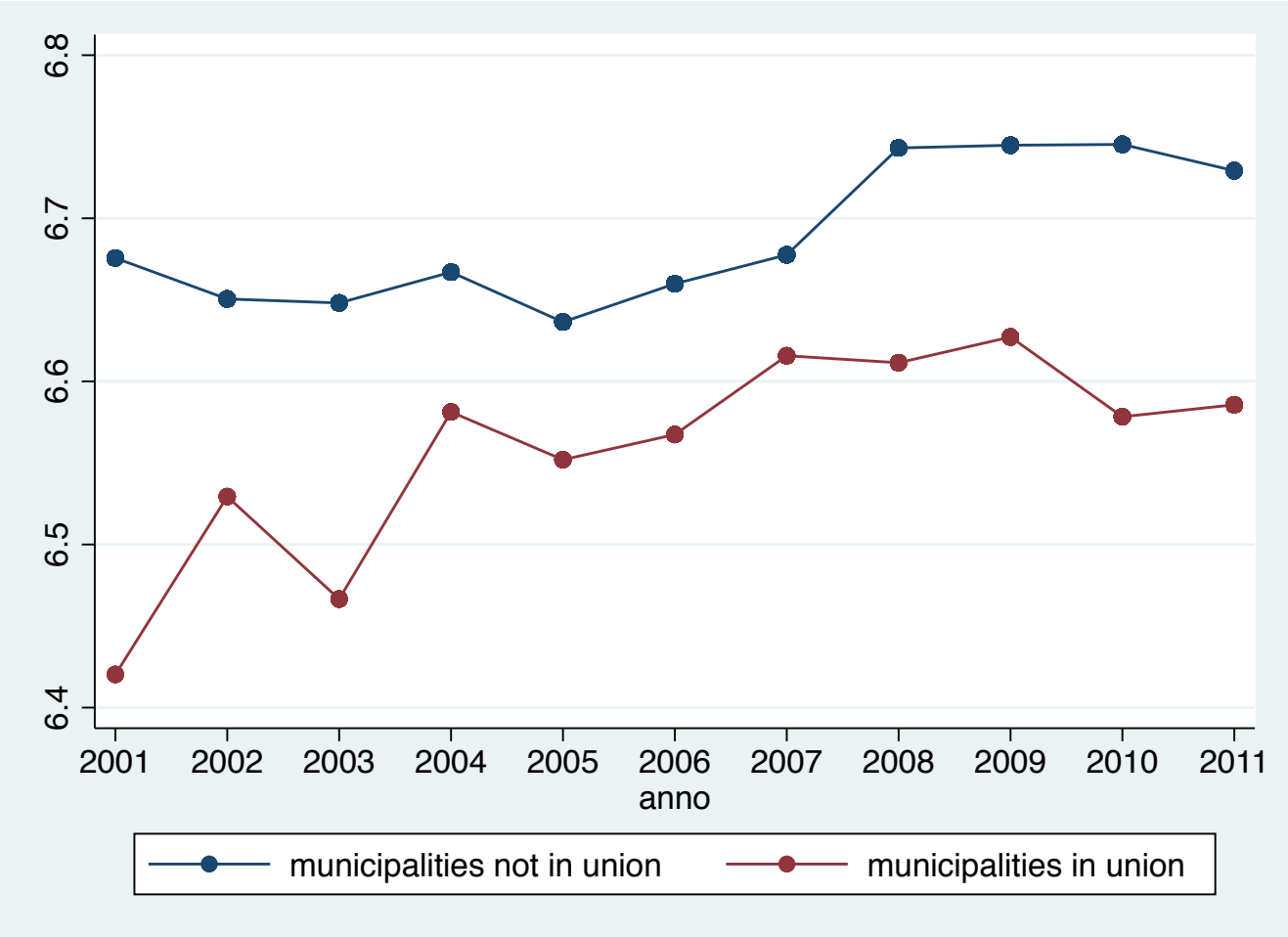
Table: Municipalities in Unions in Emilia Romagna 2001-2011

Year	Municipal Unions	Municipalities not in Unions	Municipalities in Unions	% of Municipalities in Unions	Total Municipalities
2001	1	328	9	2.67	337
2002	5	314	23	6.82	337
2003	5	303	23	7.06	326
2004	6	305	32	9.50	337
2005	6	303	32	9.55	335
2006	10	277	52	15.81	329
2007	10	281	54	16.12	335
2008	13	266	70	20.83	336
2009	25	199	132	39.88	331
2010	29	193	150	43.73	343
2011	31	180	160	47.06	340

Expenditures

- Dependent variable: total current expenditure of each municipality, in per-capita terms.
- It is used as an aggregate measure of performances of municipalities in Union and not.
- For municipalities in Union the measure includes their transfers to the Union
  - indeed the services provided by the Unions are financed by transfers and by direct expenditures.
- The average pc expenditure of municipalities in U is 751.10 euros whereas for the others is 835.99 euros. Differences of 84.88 euros

Figure: Evolution of expenditures - 2001-2011



Identification strategy I

Objective: identify the causal effect of being a member of a MU on the spending decisions of single M.

- Ideal framework: to compare decisions on expenditure for M in a U (treated group), to the same decisions for M in the counterfactual situation of not being in the U.
- This is impossible.

Identification strategy II

- Best alternative is a randomized control trial: to assign participation and non participation in a MU across municipalities, and compare the average expenditures of the two groups.
- Our analysis: quasi-experimental approach
  - define a suitable control group that can credibly estimate the counterfactual.
  - Main issue: unobservable characteristics between M in U and NU, and which might be correlated to the expenditures.
  - Methodology used difference-in-differences $\longrightarrow$ remove unobservables fixed over time.

Difference-in-differences

- For each year, we have municipalities in Unions (treated group, TG) and municipalities not in Unions (control group, CG).
- We compare the change in expenditures in TG before and after the participation in a MU, to the change in expenditures in CG for the same period.
- We estimate the following two-way fixed effect linear model

$$Y_{it} = \mu_i + \tau_t + \gamma MU_{it} + \beta \mathbf{x_{it}} + \varepsilon_{\mathbf{it}} \tag{1}$$

Difference-in-differences - notation

- Y_{it} is log per capita expenditure in municipality i at time t
- MU_{it}: dummy variable $=1$ if municipality i at time t belongs to the Municipal Union and zero otherwise.
- μ_i municipalities fixed effects
- τ_t exogenous shocks, common to all municipalities in period t.
- $\mathbf{x_{it}}$: time-varying demographic and socio-economic characteristics.
- γ is the difference-in-difference estimate of the effect of being in a Municipal Union on expenditure.
- standard errors clustered at municipal level.

Control variables

- Population of M, population density (number of citizens per area), and inverse of population.
  - variables that capture scale economies or dis-economies in the provision of public goods and congestion effects.
- Proportion of citizens aged 0-5, proportion of citizens aged over 65
  - account for some specific public needs (e.g., nursery school, nursing homes for the elderly).
- Average per capita income proxied by the personal income tax base, and the proportion of taxpayers.
- Total per capita revenue of MU: own total revenue + transfers from higher levels of government.
  - variable that allows to separate the effect of being in MU from the variation in the financial resources raised by the Municipal Union.

Heterogeneity of the policy.

- We evaluate whether the effect of the policy varies with respect to the permanence in MU.
- We take into account the length of time spent by each municipality in the Union after joining it.
- This is an important issue since we are dealing with multiple treatment groups and multiple time periods.
- We estimate a modified version of equation 1, where we add a continuous variable that measures the permanence in the Union (from zero to 11 years), and we also include its quadratic term.

Sample selection bias

Two potential sources of bias

1. effect of entering a Union is not homogeneous
   - This bias arises when municipalities in the TG are somehow different than those in CG.
2. the effect varies according to the characteristics of the municipalities.
   - this bias might be due to different distributions, within the treatment and the control groups, in the vector of observable characteristics that affect expenditures.

Solution: propensity score matching models.

- The main purpose is to find a group of non-treated municipalities, who are similar to the treated in all relevant pre-treatment characteristics
- the only remaining difference being that one group enters a Union and another group does not.

Propensity score matching I

1. Estimation of the propensity score
   - The probability of entering a U conditional on pre-treatment characteristics $\mathbf{x}$, $P(\mathbf{x}) = Pr(MU = 1|\mathbf{x})$
   - We use data from the 2001 Census and run a logit regression,
   - $\longrightarrow$ dependent variable: dummy =1 if a municipality in MU between 2001-2011 and zero otherwise.
     - control variables: municipality located close to the coast, rural municipality, surface in square km of the municipality, municipality located in plain, on hills, and in mountains; municipal unemployment rate; number of houses; number of firms; interaction between surface and houses; interaction number of firms and unemployment rate.

Propensity score matching II

2. Once we have obtained the (PS), following Smith and Todd (2005), we adopt a trimming procedure to define the common support
   - region of values of PS that have positive density within both the treatment and control groups distributions.
3. We re-estimate equation 1 by using information only on the observations that lie on the common support.

DiD propensity score matching I

- Within the common support, the distribution of **x** might be different between treated and control observations, keeping the second source of bias.
- We control for it by using a non-parametric DiD kernel matching approach.
- We choose 2008 and 2010 as pre-treatment and pos-treatment period, respectively.
- Following Heckman et al. (1998) we estimate

$$\gamma^{DiD} = \sum_{i \in MU} \left\{ \left[Y_{it_1} - Y_{it_0} \right] - \sum_{j \in NMU} W_{ij} \left[Y_{jt_1} - Y_{jt_0} \right] \right\} w_i \qquad (2)$$

- W_{ij} and w_i are weights to construct the counterfactual and re-weighting the treated sample, respectively.

DiD propensity score matching II

- w_i is the re-weighting for the treated sample.
- t_0 and t_1 are time periods before and after entering a Union.
- MU: municipalities not in U in t_0 that will join a Union in t_1
  - we include only municipalities that join a U in 2009.
- NMU: municipalities not in U in t_0 that will remain out in t_1
  - municipalities that never joined a Union.
- Y is the expenditure of municipalities.
  - We perform the matching approach by comparing expenditure between municipalities in TG and CG in 2008 and in 2010.

Table: Effect of the Union on Log Expenditures

Dependent variable:	Log Expenditures						
	Full sample			Matched sample			Kernel matching[a]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Municipal Union	-0.065***	-0.047***	-0.030**	-0.063***	-0.048***	-0.030**	
	(0.012)	(0.015)	(0.015)	(0.013)	(0.016)	(0.015)	
Permanence			-0.022***			-0.021***	
			(0.006)			(0.006)	
Permanence square			0.002***			0.002***	
			(0.000)			(0.000)	
Union_{08-10}							-0.069***
							(0.020)
N	3686	3586	3586	3411	3311	3311	434
Year FE	✓	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓	
Municipality controls		✓	✓		✓	✓	

Standard errors clustered at municipality level.
Significance levels: *** 1% ** 5% * 10%.
[a] Kernel difference in differences matching. Control group= municipalities never in Union.
Treatment group: municipalities that joined a Union in 2009.
Sample size restricted to years before and after the Union 2008 and 2010

Table: Permanence in the municipal union

Dependent variable:	Log Expenditures - 2001-2011	
	Full sample	Matched sample
	(1)	(2)
1 year	-0.030**	-0.030**
	(0.015)	(0.015)
2 years	-0.049***	-0.049***
	(0.016)	(0.016)
3 years	-0.064***	-0.064***
	(0.018)	(0.018)
4 years	-0.075***	-0.074***
	(0.020)	(0.021)
5 years	-0.081***	-0.079***
	(0.023)	(0.024)
6 years	-0.082***	-0.080***
	(0.026)	(0.027)
7 years	-0.080***	-0.077***
	(0.029)	(0.029)
8 years	-0.072**	-0.069**
	(0.032)	(0.032)
9 years	-0.061*	-0.057
	(0.034)	(0.035)
10 years	-0.044	-0.040
	(0.037)	(0.038)
11 years	-0.024	-0.018
	(0.040)	(0.041)

Significance levels: *** 1% ** 5% * 10%.

Analysis on different outcomes I

- The results show that inter-municipal cooperation increases the efficiency of the single municipality,
  - i.e. its expenditure reduces once the municipality enters a Union.
- However, these savings might not be a real gain in efficiency
- but the consequence of a reduction of the level or the quality of public services.

We test whether local public services are affected by inter-municipal cooperation using four proxies of their level.

1. per capita birth rate,
2. net migration to the municipality
3. p.c. primary school class size
4. p.c. number of road accidents.

Analysis on different outcomes II

If local services were to decline we would expect a negative impact on these indicators, as a consequence of the reduction in expenditures. For example:

- poor local public services may imply lower migration and lower birth rates, as a result of lower attractiveness of the municipality.
- Less expenditures may increase the school class size, a typical indicator of the quality of the school service.
- A decrease in current expenditures which leads to a worsening of roads or bridges maintenance might increase car accidents.

Table: Effect of the Union on alternative output

	(1)	(2)	(3)	(4)
Full sample				
Municipal Union	0.000	0.000	-6.256	-0.000
	(0.000)	(0.000)	(7.666)	(0.000)
N	3613	2320	3613	3524
Matched sample				
Municipal Union	0.000	0.000	-4.414	-0.000*
	(0.000)	(0.000)	(6.984)	(0.000)
N	3586	2301	3586	3498
Year FE	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓
Municipality controls	✓	✓	✓	✓

Standard errors clustered at municipality level.
Significance levels: *** 1% ** 5% * 10%.

Comments

- It is clear that being in U does not affect any of our four local service indicators.
- Inter-municipal cooperation is not associated to any reduction in the provision of public services
- Expenditure savings coming from the participation to a U can be interpreted as an efficiency gain.

Robustness Checks: common trend I

- To verify the DiD key identification assumption of common time trend in the pre-treatment periods for both comparison groups.
- We perform a test re-estimating equation 1 including the interactions of the time dummies and the treatment indicator for the first three pre-treatment periods $\longrightarrow$ "leads"
- If the expenditure trends between TG and CG are the same, then the coefficients of the interactions should be insignificant,
  - the difference in differences is not significantly different between the two groups in the pre-treatment period.

Robustness Checks: common trend II

- Additionally, we include the interaction of the time dummies after the treatment (up to 3 years) with the treatment indicator $\longrightarrow$ "lags"
  - this can show whether the treatment effect changes over time.

We estimate the following version of equation 1:

$$Y_{it} = \mu_i + \tau_t + \sum_{j=0}^{m} \gamma_{-j} MU_{i,t-j} + \sum_{j=1}^{n} \gamma_{+j} MU_{i,t+j} + \beta \mathbf{x_{it}} + \varepsilon_{\mathbf{it}} \quad (3)$$

- the sum of γ_{+j} allows for n leads or anticipatory effects.
- A test of the difference in differences assumption is $\gamma_{+j} = 0$ for each $j = 1 \ldots n$

Robustness Checks: common trend III

  - the coefficients of all leads of the treatment should be zero.
- the sum of γ_{-j} allows for m lags effects
- γ_{-j} may not be identical and if the effect of the treatment is growing over time γ_{-j} increases in j.

Table: Evaluation of the common trend

Dependent variable:	Log Expenditures			
	Full sample		Matched sample	
	(1)	(2)	(3)	(4)
Municipal Union	-0.044***	-0.018*	-0.043***	-0.017*
	(0.011)	(0.009)	(0.011)	(0.009)
lead_{t+1}	0.006	0.004	0.007	0.005
	(0.010)	(0.010)	(0.010)	(0.010)
lead_{t+2}	-0.010	-0.009	-0.013	-0.013
	(0.011)	(0.011)	(0.011)	(0.011)
lead_{t+3}	0.013	0.008	0.015	0.010
	(0.009)	(0.010)	(0.009)	(0.010)
lag_{t-1}		-0.025**		-0.025**
		(0.010)		(0.010)
lag_{t-2}		-0.022*		-0.021
		(0.013)		(0.013)
N	3631	3631	3356	3356
Year FE	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓
Municipality controls	✓	✓	✓	✓

Standard errors clustered at municipality level.
Significance levels: *** 1% ** 5% * 10%.
[a] We exclude transfers because not available for entrants in 2011

Robustness Checks: Reverse causality I

- Another important assumption is the absence of reverse causality
- we exclude any direct effect of expenditure on the decision to join a Municipal Union.
- To test this assumption we estimate the conditional probability to enter a Union for a municipality i at time t, given that the event has not yet occurred.
- Our hypothesis is that the coefficient of log expenditures is not significant, i.e. there is no reverse causality.
- The results of the duration model confirm our hypothesis.

Table: Estimates of the effect of the expenditures on the probability to join the union

	Homogenous				*Heterogenous*				
	Coeff.	*s.e*	*Hazard Ratio*	*LogL*	*Coeff.*	*s.e*	*Hazard Ratio*	*LogL*	*P-val**
Log expenditures	-0.317	(0.330)	0.728	-473.537	-0.317	(0.330)	0.728	-473.537	0.496

*LR test of model with Normal distributed heterogeneity against model without controlling for heterogeneity.
All models contain the same control variables.
Significance levels: *** 1% ** 5% * 10%.

Robustness Checks: more homogeneous CG I

- We estimate our DiD model using a more homogeneous definition of the control group.
- We restrict the sample to the years 2001-2008
- and we exclude municipalities that never enter a Union (never treated).
- We include in CG the municipalities that join a Union between 2009 and 2011 (future treated)
  - together with all the municipalities observed in the years before entrance (within the period 2001-2008).

Table: More homogeneous control groups

Dependent variable:	Log Expenditures - 2001-2008	
	Full sample	Matched sample
	(1)	(2)
Municipal Union	-0.069***	-0.071***
	(0.018)	(0.018)
N	1217	1201
Year FE	✓	✓
Municipality FE	✓	✓
Municipality controls	✓	✓

Standard errors clustered at municipality level.
Significance levels: *** 1% ** 5% * 10%.
We exclude transfers because not available before 2006.
Control group includes future treated.

Conclusions I

- We analysed the Italian experience of Municipal Unions, using unique administrative data on the municipalities in Emilia Romagna region.
- In the period considered, 2001-2011, almost half of the municipalities form a MU.
- We employed a DiD approach combined with matching models to estimate the causal effect of being member of a Municipal Union on local expenditures.
- Participation to a U reduces total current per-capita expenditures by 5%, compared to municipalities not in U.

Conclusions II

- Effect persistent and increases up to nine years from the participation to a U.
- Entering a U do not decrease the quality of public services.
- We conclude that MU is an efficient tool that allows municipalities to gain efficiency, in terms of a reduction in public expenditures.

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