

Local government expenditure policy in case of partial decentralization.

**Panel analysis for spending on primary and
lower-secondary education in Mazowsze
region.**

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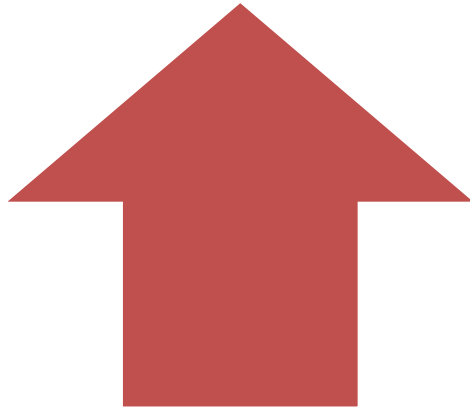
Aim of the study:

- The aim of the paper is to analyze factors influencing Polish local governments spending behaviors on education. The special focus is given to degree of expenditure autonomy which differ various tasks related to education

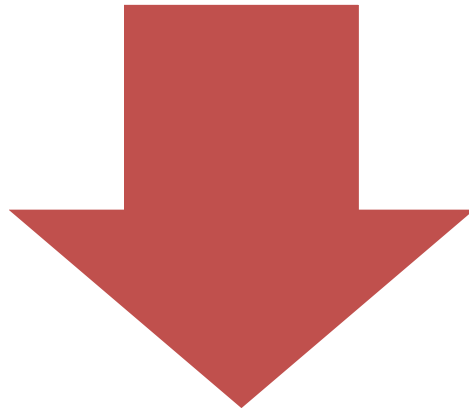
Presentation structure

- ✓ Theoretical background partial decentralization- its definition, measuring and influence on local government spending
- ✓ Sub-sovereign governments as pre-tertiary education provider in Poland
- ✓ Results of quantitative study
- ✓ Conclusions.

Theoretical background /motivation



In theory the local governments which finance its own task with local taxes and charges allocate local public goods efficiently and optimally (Oates, W., 1972; Tiebout, Ch., 1956).



But in practice local government autonomy is limited. And decentralisation is partial

Theoretical background /motivation

- Most studies analyze effect of limited revenue autonomy.
 - for example in research on spending behaviors, grants and own revenues are analysed separately (fly paper effect and super-flypaper effect) (Gramlich 1969; Inman 2008; Gramkhar 2002))
- The spending autonomy is more difficult to measure.
 - the typical measure of fiscal decentralization in international studies is share of local government spending in public spending or tax autonomy measure (Feld i in. 2008)

Theoretical background /motivation

- Taking into account different aspects of local autonomy- policy, budget, output and input Bach, S. et al., 2009 propose method to differentiate various goods in term of local spending power. Suggested by them the measure of spending decentralization is not quantitative one but in ordinal scale. It means we could not measure spending power for different goods but we could define which is less or more decentralized. Such comparison is used in this paper.

Centralized and decentralized tasks in education

- Employment and compensation policy – local policy is limited by law (Teacher's Chart):
 - Minimum and average level of salaries
 - Fast path of teachers career
 - High costs of teachers firing
- Maintenance and supplies needed for education-dependent on local policy, and limited by:
 - Costs of energy
 - Statement of infrastructure

The structure and level of municipal revenues in Mazowsze region

	share of revenues in total revenues					revenues per capita		
stats	specific grants	general grants other than educational	educational grant	Shares in PITCIT	own revenues	total revenues	own revenues	Shares in PITCIT
mean	24%	12%	25%	13%	27%	3178.8	1284.9	404.4
p50	23%	12%	25%	11%	25%	3013.3	1125.9	330.9
min	2%	0%	2%	1%	6%	1972.3	358.7	99.1
max	69%	30%	44%	56%	76%	28663.5	21517.6	2736.3

Diversification of municipalities' spending for primary schools and gymnasiums - maintenance and salaries per pupil in 2012 (in Zł, 2011)

	salary	maitenance
mean	8006.7	896.3
p50	7871.3	840.1
max	22343.4	2437.4
min	3530.2	87.7

Number of pupils, teachers in schools provided by sub-sovereign government in years 2006-2012

	2006	2007	2008	2009	2010	2011	2012
number of schools	18475	18088	17869	17756	17715	17468	16916
number of pupils	3831688	3594291	3452631	3335635	3232129	3173714	3080359
pupils per school ratio	207.4	198.7	193.2	187.9	182.5	181.7	182.1

Modified demand model of median voter.

(see, eg, Borge L, et al J., 1995; Falch, T., & Rattsø, J. 1997)

$E_{kit} = f_k(\text{dec}_{it}; \text{sch}_{it})$

$i = 1 \dots 303$ - municipality

$t = 2006; 2007; 2008; 2009; 2010; 2011$ - year

E_{ki} - spending for two different kind of education goods- salaries (1) and maintenance +supplies (2) ($k=1,2$)

dec_{it} - group of variables which define local government (i) financial statement and level of its revenue

decentralization in year t

sch_{it} - group of variables which characterize local education and its costs in locality i in year t

List of variables and descriptive statistics: variation over Masovian municipalities (average for years 2006-2012)

Type of variable	Name of variable	description	mean	p50	min	max	cv
spending	salary_ps	Spending for salaries per student*	6752.9	6615.8	3655.3	14846.0	0.2
spending	maitenance_ps	Spending for maintenance and supplies needed for education per student*	855.6	811.5	219.2	3599.0	0.3
School system	school_size	School size (number of students)	167.8	131.7	51.6	742.5	0.7
School system	young_to_old	Ratio of young people (till 18) to the old (at retirement age)	1.0	1.0	0.5	2.1	0.2
decentralization	subv_pc	Educational general grant per capita*	727.1	741.8	297.8	1192.6	0.2
decentralization	ownrevenues_PITCIT_pc	Own revenues and shares in PIT and CIT per capita*	1121.2	871.4	340.3	7269.9	0.6
decentralization	ownPITCIT_to_all_rev	The share of own revenues and PIT and CIT in all revenues	0.39	0.33	0.87	0.11	0.5

Estimations results for linear models

	salary_ps	maintenance_ps
subv_pc	0.633	0.888
	-1.68	(5.29)**
ownrevenues_PITCIT_pc	0.008	0.07
	-0.14	(2.47)*
school_size	-2.058	-1.14
	(2.03)*	(2.57)*
young_to_old	-968.201	-233.215
	(2.95)**	-1.76
rok==7	-894.871	-51.619
	(30.17)**	(2.96)**
rok==8	-1,064.705	2.783
	(31.47)**	-0.16
rok==9	-968.739	-14.818
	(28.52)**	-0.92
rok==10	-568.817	-7.784
	(17.01)**	-0.49
rok==11	-306.461	-5.205
	(11.20)**	-0.37
Constant	8,900.287	571.269
	(39.39)**	(4.17)**
Observations	1818	1818
Number of numer	303	303

Absolute value of t-statistics in parentheses; * significant at 5%; ** significant at 1%

Estimations results for log-log models

	lnsalary_ps	lnmaintenance_ps	lnsalary_ps	lnmaintenance_ps
lnsubv_pc	0.029	0.342	0.028	0.376
	-0.88	(2.72)**	-0.83	(2.93)**
lnownrevenues_PITCIT_pc	-0.009	0.139		
	-0.92	(3.67)**		
ownPITCIT_to_all_rev			-0.01	0.269
			-0.31	(2.03)*
lnschool_size	-0.099	-0.168	-0.1	-0.165
	(5.16)**	(2.27)*	(5.18)**	(2.22)*
young_to_old	-0.165	-0.333	-0.165	-0.338
	(4.37)**	(2.45)*	(4.36)**	(2.47)*
rok==7	-0.158	-0.099	-0.158	-0.106
	(38.45)**	(5.50)**	(38.40)**	(5.84)**
rok==8	-0.17	-0.022	-0.17	-0.024
	(38.33)**	-1.2	(37.54)**	-1.28
rok==9	-0.142	-0.025	-0.142	-0.031
	(33.25)**	-1.51	(33.03)**	-1.83
rok==10	-0.08	-0.012	-0.08	-0.019
	(18.81)**	-0.72	(18.86)**	-1.13
rok==11	-0.043	-0.019	-0.042	-0.021
	(12.02)**	-1.33	(11.95)**	-1.47
Constant	9.507	4.701	9.459	5.336
	(64.48)**	(7.13)**	(65.46)**	(8.30)**
Observations	1818	1818	1818	1818
Number of numer	303	303	303	303

Absolute value of t-statistics in parentheses; * significant at 5%; ** significant at 1%

Conclusions

- local governors spending policy related to teachers and their salaries is not influenced by local revenues.
- Local governors spending policy related to less decentralized task (teachers employment and remuneration) is limited. Despite the fact that under the law teachers' employment and remuneration is the own municipal responsibility, local governors do not use this right.
- In case of tasks where the spending autonomy is limited due to legal regulation we can observe in analyzed short period incremental budget behaviors

Conclusions

- The budget policy in case of more decentralized task is more elastic and more differentiated among municipalities.
- On one hand this is the result of decentralization and could be visible as representation of real local needs. On the other, it could result important problem in vertical equity of education.
- We can observe fly paper effect in case of decentralized spending
- In case of more decentralized task we can observe budget behaviors defined as punctuated

THANK YOU FOR YOUR ATTENTION