

Determinants of cities and towns spending on culture: *Analysis for Poland.*

Agnieszka Kopańska,
Faculty of Economic Sciences, University of Warsaw
kopanska@wne.uw.edu.pl

Acknowledgments: This research is part of project funded by the National Science Centre of Poland (project 2014/13/B/HS4/03204).

Aim of the study:

- to find determinants of variation of Polish cities and towns spending on culture.
 - Are those spendings are matched to citizens preferences?
 - How does (if) differences in degree of local autonomy influence the cities spending decisions on culture?

Presentation structure

- ✓ Short overview of the literature on determinants of local governments' spendings, with a special focus on decentralized spending for cultural services
- ✓ Presentation of basic information on local governments finance and organization in Poland.
- ✓ Introduction of indicators of expenditure and revenue autonomy for Polish local governments
- ✓ Quantitative study – panel data analysis for Polish cities and towns' spendings on culture in years 2000-2014
- ✓ Conclusions.

- Preference matching idea or allocative efficiency - local public spendings are in line with local citizens preferences (Tiebout, 1956; Oates, 1972)
- Median voter demand framework (Bergstrom & Goodman, 1973; Borchering & Deacon, 1972):

$$E_i = f(\text{soc}_i, \text{fin}_i, \text{cost}_i);$$

where

- E_i - expenditures per capita for analyzed good of i 's municipality
- soc_i ,- the vector of a characteristic of a local society in municipality i
- fin_i - municipality i financial statement
- cost_i - the vector of characteristics of i ' municipality which explain the variation of costs of local production

Determinants of local spending on culture

- Socio-economic characteristic of society:
 - Young people (+/-)
 - Old people (-)
 - Women (+)
 - Private income (+/-)
 - Level of education (+)
- Characteristic of the local cultural sector
 - Size of population (+/-)
 - Population density (+/-)
 - Number of cultural institutions (+/-)

Determinants of local spending on culture

- Local government's financial statement
 - Income (+)
 - Level of real local revenue and spending autonomy (+)

Indicator of spending autonomy

$$\text{ISA} = (\text{OE} - \text{N\&LA}) / \text{OE}$$

OE- operational expenditure

N&LA- no- and low-autonomous expenditure

Indicator of revenue autonomy

$$\text{IRA} = \text{OR} / \text{R}$$

OR- own local revenues and the losses of revenues due to local fiscal policy

R- total budget revenues

Local governments in Poland and their fiscal autonomy

- Sub-soverigne expences are about 30% of public expences
- 3 levels- 2479 municipalities (rural, mixed, urban (239) and big cities (66), 314 counties and 16 regions.
- Municipalities decide about 80% of sub-soverigne expences
- In towns and cities the most important current expenditures are : education, social protection, administration, communal services , transport
- Towns and cities have their own revenues, but shared taxes and general transfers are also important

Differentiation of revenue autonomy (IRA) of cities and towns. Data for 2014.

	mean	p50	min	max	cv
big cities	0.41	0.41	0.28	0.64	0.18
towns	0.44	0.43	0.25	0.89	0.20
Total	0.43	0.42	0.25	0.89	0.20

Differentiation of spending autonomy (ISA) of cities and towns. Data for 2014.

	mean	p50	min	max	cv
big cities	0.54	0.54	0.38	0.75	0.14
towns	0.50	0.50	0.35	0.75	0.14
Total	0.51	0.51	0.35	0.75	0.15

Differentiation of per capita spending on culture in in years 2000-2014

	CITIES					TOWNS				
year	mean	p50	min	max	cv	mean	p50	min	max	cv
2000	75.9	71.2	33.9	147.5	0.35	63.4	57.2	8.2	304.3	0.51
2001	78.0	72.4	37.1	212.4	0.39	62.6	57.8	7.2	305.2	0.48
2002	77.6	71.7	22.3	219.3	0.43	64.1	59.3	12.1	297.4	0.48
2003	79.6	73.2	34.1	215.2	0.40	65.9	61.0	15.3	264.5	0.44
2004	82.3	78.3	35.5	208.2	0.41	67.1	59.8	10.9	302.3	0.47
2005	85.5	80.2	38.6	198.5	0.41	71.9	66.2	11.5	311.4	0.46
2006	92.8	85.1	43.0	234.0	0.41	77.2	72.2	15.8	307.3	0.48
2007	99.9	94.6	44.4	225.4	0.37	82.4	76.9	16.0	278.5	0.44
2008	110.4	101.0	53.0	267.5	0.39	91.5	85.9	17.4	426.7	0.48
2009	115.8	108.1	52.3	291.1	0.40	97.8	92.3	18.1	446.3	0.47
2010	117.5	106.6	48.4	310.2	0.39	99.7	90.1	23.9	417.3	0.49
2011	115.7	108.4	44.5	339.3	0.41	93.6	87.2	16.3	387.6	0.47
2012	114.4	110.0	45.5	346.7	0.41	93.9	85.9	17.3	396.6	0.49
2013	114.1	108.1	45.9	373.6	0.43	95.4	87.9	20.0	406.0	0.47
2014	122.7	117.0	57.0	359.4	0.41	102.2	92.5	29.1	420.4	0.46

Quantitative study- panel data analysis, dynamic estimator-system GMM

$$1 \quad Eit = \alpha E_{i(t-1)} + \sum_k \beta_k soc_{it} + \sum_m \delta_m cost_{it} + \sum_n \gamma_n fin_{it} + \theta T + \varepsilon_{it}$$

$$2 \quad Eit = \alpha E_{i(t-1)} + \sum_k \beta_k soc_{it} + \sum_k \beta_{Dsock} Dsoc_{it} + \sum_k D \beta_{Dsock} + \sum_m \delta_m cost_{it} \\ + \sum_n \gamma_n fin_{it} + \theta T + \varepsilon_{it}$$

Quantitative study (1)

	Description of the variable:		
Financial variables	Logarithm of spending for culture per capita in year t-1	0.855***	0.836***
	Specific grants for culture from central budget per capita	0.001***	0.002***
	Own revenues from culture per capita	-0.0004**	-0.0003*
	Logarithm of revenues per capita	0.112**	0.121**
	Indicator of spending autonomy		0.342***
	Indicator of revenue autonomy	0.049**	
	Investment for culture per capita in year t-1	0.0003***	0.0003***
Socioeconomic variables	Share of population 0-4 in community	-0.479	-0.914**
	Share of population 5-19 in community	0.159	0.55***
	Share of population older than 59 in community	-0.52	-0.098
	Share of men in population	0.004	-0.526*
	Share of people with the highest degree of education in community in 2002	0.261***	0.303***
	Living area per capita	0.00	-0.00
	Number of private firms per capita	0.172***	0.141***
	Dummy variable representing part of Poland occupied in XIX century by Prussia (Austrian part is comparison)	0.011**	0.002
Cost variables	Dummy variable representing part of Poland occupied in XIX century by Russia (Austrian part is comparison)	-0.06	-0.03
	Density of population	0.00	0.00**
	Logarithm of number of citizens	-0.006*	-0.011***
	Number of houses of culture	0.002***	0.002***
	Number of communal museums	-0.002	-0.005***
	Number of communal cinemas	0.027***	0.025***
	constant	0	0
Number of observations		4,206	4,206
number of groups		304	304
number of instruments		221	221
Arellano-Bond test for AR(2)		0.097	0.095
Hansen test of overid. restrictions:		0.696	0.76

Interaction analysis (2)

	1	2	3	4	5
variables:	only dummy	pop0_4_ all	pop_5_1 9_all	High_ed uc_all	firms_pc
ISA-low	-0.024***				
ISA-high	-0.007				
variable		-0.901**	0.544***	0.277***	0.23***
variable-group low		0.463	0.1 ^{xxx}	0.228	0.029
variable- group high		0.566	0.122 ^{xx}	0.066	-0.122
Arellano-Bond test for AR(2)	0.094	0.093	0.095	0.095	0.094
Hansen test of overid. restrictions:	0.745	0.703	0.748	0.727	0.729
IRA-low	-0.025***				
IRA-high	0.031***				
variable				0.124	0.195***
variable-group low				0.438 ^{xxx}	0.016
variable- group high				0.37 ^{xxx}	-0.176 ^x
Arellano-Bond test for AR(2)	0.095			0.094	0.095
Hansen test of overid. restrictions:	0.355			0.370	0.321

Conclusions

- Towns and cities spendings on culture are determined by the socioeconomic characteristic of local society. More educated people, school kids or women desire more cultural services
- The possibility of local governors to finance cultural services is limited by the fiscal limitation of public budgets. My study presents that not only the size of the local budget is important, but also the real autonomy related to the local revenues and spending
- The limits in spending autonomy, much better than in revenue autonomy, explain differences in towns and cities spending on culture. 1% more revenue autonomy results in 0,05% more spending on culture, but 1% more independence in spending causes 0,35% more spending on culture

Conclusions

- I do not find in my study the differences on preference matching among groups of towns and cities with different autonomous groups. The only difference is the size of spending, but the allocation pattern is similar
- The variation of spending is an expression of equity problem, when citizens in different towns and cities receive a different level of public services. But as my study presents, the solution is not a grant or regulation which force local governments to do something, but rather more autonomous budgets on revenue and expenditure sides



UNIVERSITY OF WARSAW
Faculty of Economic Sciences

Thank you for your attention