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Regional Capital No More. How the Reform of the Territorial Government has Marginalized Polish Middle-sized Cities

Borys Cieślak[1]
Paula Nagler[2]
Frank van Oort[3]

1 Gran Sasso Science Institute, School of Advanced Studies, Italy

2 Institute for Housing and Urban Development Studies, Erasmus University Rotterdam

3 Erasmus School of Economics, Tinbergen Institute, Erasmus University Rotterdam

Regional Capital No More

How the Reform of the Territorial Government has Marginalized Polish Middle-sized Cities

Borys Cieślak[1] Paula Nagler[2] Frank van Oort[3]

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Abstract

Among Polish cities facing socio-economic difficulties are the former regional capitals which lost their administrative status due to the 1998 reform, reducing the number of regions from 49 to 16. Making use of this quasiexperimental setting, we assess the impact of the loss of administrative status on the affected cities with difference-in-differences models. Our findings show a significant negative impact on economic and, partly, on other dimensions of development. Restructuring and scaling of devolved regions resulted in 'leaving places behind'. The problematic socioeconomic trajectories of Poland's former regional capitals caused or accentuated by the reform suggest a sustained marginalization.

Keywords: Socioeconomic development, marginalization, decentralization, regional capital status

JEL Codes: R11, R15, R58

[1] Gran Sasso Science Institute, School of Advanced Studies, Italy; e-mail: borys.cieslak@gssi.it

[2] Institute for Housing and Urban Development Studies, Erasmus University Rotterdam, The Netherlands; e-mail: nagler@ihs.nl

[3] Erasmus School of Economics, Institute for Housing and Urban Development Studies and Tinbergen Institute, Erasmus University Rotterdam, The Netherlands; e-mail: vanoort@ese.eur.nl

1 Introduction

Poland's rapid transition to democracy and capitalism in the 1990s entailed, among other things, an overhaul of subnational government structures. While the revival of the local governments (municipal level) was quick and is perceived as one of the transformation's most successful reforms, establishing new county and regional administrations turned out to be contentious and problematic (Kaczmarek, 2022). After lengthy debates in which the delimitation of new regions and the selection of new regional capital cities were discussed (and kept changing until the very last moment), the new territorial division was agreed upon in 1998. Consequently, the number of voivodeships[4] decreased from 49 to 16.

Reducing the number of regions in a country has potentially large consequences for economic and social local development. Some city-regions scale up and potentially benefit from agglomeration advantages (Bristow, 2005), while others are merged into larger constellations and can lose development perspectives, status and identity (Brenner, 2004; Banini & Ilovan, 2021). In the rich literature on city-regions and their supposed impact on economic growth and competitiveness, Moisio and Jonas (2018, p. 291) identify some applied research gaps concerning such rescalings: "it is very difficult to say to what extent the spatial consequences of material city-regional growth have informed or are impacted by the process of city-regional organization and governance". Similarly, Harrison (2007, p. 314) made a plea for more empirical research: "What remains unexplored to date are the political-economic implications of sudden territorial and scalar shifts in the positioning of the regional competitiveness discourse (...) to a new regionalised inspired notion on city-regions". Harrison and Hoyler (2015, p. 246) further make a strong case on the history, periodisation, and temporality of mega-regions' economic success, suggesting that prerestructuring conditions may long determine outcomes.

In our study, we examine the impact of the Polish territorial reform of 1998 on the development trajectories of the affected cities. Making use of the quasiexperimental setting, we run panel difference-in-differences (DiD) estimations using data from Statistics Poland, spanning 25 years. This estimation strategy, thus far missing in the literature discussing the consequences of this reform, allows for an identification of the toll the reform took on the affected cities, contributing to addressing some of the long-lasting applied research gaps

[4] The terms voivodeships and regions are used interchangeably in this study.

distinguished in city-region research. Specifically, it enables us to understand how much of the increasing developmental disparities between those cities that lost and those that maintained the role of a regional capital can be attributed to the reform. Although the economic impact of decentralisation and city-regional development is central in the scaling debate (Moisio & Jonas, 2018; Rodríguez-Pose & Muštra, 2022), it is intertwined with social, institutional and political aspects of governance (Marston, 2000; Scott, 2019). Following Tomaney and Pike (2020) and MacKinnon et al. (2021), we conceptualize the resultant peripheralisation-centre formation beyond economic indicators and as comprehensively as the available data allow. In addition to conventional economic indicators, we examine demographic structure of the analysed cities, their housing supply or availability and usage of cultural amenities. In this, we look at the growing inequality between beneficiaries of the reform and places stripped of the privileged administrative status: "The winning side of the process will excite us and motivate talent, but the losing side will create displacement and anger" (Storper, 2013, p. 4). Our results show that a considerable part of existing territorial inequalities, in terms of economic development and demographics, can be explained by the loss of administrative function.

We thus join the debate on uneven territorial development, which has been recently reinvigorated by the 'places left behind'-strand of research (see, e.g., Rodríguez-Pose, 2018; MacKinnon et al., 2021), by explaining one possible mechanism of producing territorial inequalities. The mechanism in question is a scalar reconfiguration, which resulted in propelling some of the cities while downgrading others. Unlike many cases of supposedly aspatial national policies, which nevertheless often show spatial bias favouring larger cities (Martin, 2021), this reform is an explicit example of a spatial (governance) policy. Our perspective derives from the implicit relation of the 'centres' with the 'places left behind'. This perspective implies an analytical necessity to view peripheralisation in a processual manner concurrently with the formation of centres and to treat it as a political, discursive, and economic phenomenon (Paasi, 2010; MacKinnon et al., 2021) that has spatial consequences (Kühn, 2015). This study explicates how a volatile political process of delimiting new regions and selecting their capitals in Poland impacted the development trajectories of the affected cities. These cities are often medium-sized and are hypothesized to have an ideal mix of agglomeration advantages while avoiding disadvantages in a recent strand of literature (Markusen et al., 1999; Dijkstra et al., 2013; Pendras & Williams, 2021).

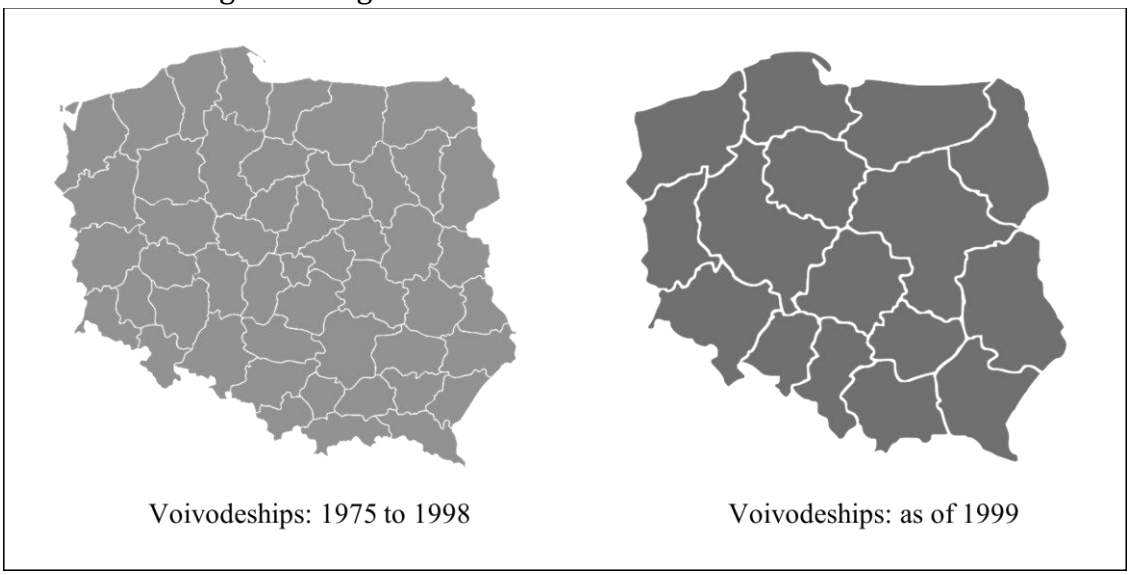
The paper proceeds as follows: in Section 2, we introduce the background and rationale for the 1998 reform, its contestation, and the (opaqueness of) criteria used to delimit new

regions that led to the selection of regional capital cities. We then proceed in Section 3 to discuss the potential channels of influence of the regional capital status on a city's prosperity and review the literature. In this, we focus explicitly on the development of regional capital cities, not the performance of the newly formed regions or macroeconomic indicators. Section 4 explains our identification strategy, and Section 5 presents and discusses the results. The final section concludes.

2 Poland's Scalar Reconfiguration of 1998

One of the fundamental elements for the Polish democratic state to be formed anew in the 1990s was the revival of territorial governments (Churski & Kaczmarek, 2022). A revised administrative local level had already been formed in 1990, but it took eight more years to decide upon the shape of the regional and county governments. The territorial division inherited from the pre-1989 socialist system comprised 49 regions and no counties. The reform of 1998 introduced the county level and reduced the number of regions to 16 (see Figure 1), which meant removing the seats of regional governments and related institutions from 31 cities[5].

Figure 1: Regional division before and after the reform



Sources: Map of 1975 division - Swohmeck (CC BY-SA 2.5); Map of 1999 division - Hiuppo (GNU Free Documentation Licence).

[5] Lubuskie Voivodeship and Kuyavian-Pomeranian Voivodeship, formed by the 1998's reform, have double capitals.

Territorial reforms have been taking place in many European countries, regardless of their political systems, level of democratization or decentralization (Kaczmarek, 2022, p. 104). At local levels, the reforms often concerned the integration of small and inefficient entities into larger units (e.g., in The Netherlands, Scandinavian countries and Germany) in the 1980s and 1990s. In the spirit of 'New Regionalism', first-tier territorial administration was complemented by strengthened second-tier administrations in the United Kingdom, Spain, Italy and Belgium (Bristow, 2018; Kaczmarek, 2022). According to Kaczmarek (2022), the postcommunist countries of Central and Eastern Europe, in turn, witnessed reforms aimed at empowering local and regional communities, yet the historical context is crucial for understanding these reforms. Kaczmarek (2022, p. 114-115) shows that in terms of average population and size, the new Polish voivodeships are comparable to the regions of large EU countries such as Germany, Spain and France after 1999.

Traditional arguments for decentralization (summarized in Cai & Treisman, 2005; Rodríguez-Pose & Muštra, 2022) clearly apply to the Polish case: (1) the local governments' capacity to match public spending more efficiently to the preferences of individuals living in different territories and (2) the supposedly higher efficiency of mobilizing underused resources due to competition among subnational governments. Laying the foundations for a regional policy aligned with the European Union's structural policy is an additional argument (Poland entered the EU in 2004). Much of the research on the supposed benefits of decentralization has, however, struggled to clearly identify this economic dividend (Rodríguez-Pose & Ezcurra, 2009; Santolini, 2020). More decentralized countries have often failed to perform better than more centralized countries (Rodríguez-Pose & Muštra, 2022), although identification of this effect remains a challenge (Iimi, 2005). The limited quality of governance in regions is hypothesized to be detrimental to the economic success of decentralization as well (Rodríguez-Pose & Muštra 2022), offsetting potential advantages.

In Poland, the debate over the delineation criteria was particularly fierce. It was argued that the previous territorial organization was problematic for several reasons. First, it was deemed too centralized, as the state government had a decisive role in public services delivery (Pijewski, 2012). Second, arguments of inefficiency due to considerable fragmentation were raised. Proponents of the reform hoped that fewer regional governments, overseeing larger areas, would translate into smaller and more efficient administration (Pijewski, 2012). Third, the need for larger regions was also linked to the European Union's cohesion policy, which was thought to be easier to implement if Poland's voivodeships were of similar size to their Western counterparts. Last, it was claimed that

reducing the number of regional capital cities and focusing investment in Poland's largest agglomerations would boost their international competitiveness (Gilowska et al., 1998).

A focus on large agglomerations and the promotion of 'star cities' (Martin, 2021, p.151), along with hopes for a spatial trickle-down, are pertinent to policies that leave noncore places behind. In the 1990s, in Poland, smaller cities were thought to benefit from the accelerated development of the new regional capitals via a spatial trickle-down of the growth stimuli. Opponents of the idea of significantly reducing the number of regions, unconvinced by this type of argumentation, warned about the risks of inducing polarization and destroying the social structures formed around the former regional capitals (Struzik, 1997).

The reform's most controversial aspect was the number of voivodeships, which was debated and kept open until the very last moment, at which point the then president pushed for their increase from 12 to 16 (Pijewski, 2012). The choice of cities that should maintain the regional capital status was the driver of this late amendment, as some smaller agglomerations leveraged their political links with the then president to secure their administrative status (Majchrowski, 2011).

However, there is no consensus regarding the final delimitation criteria of the new regions. The determinants of the choice of regional capital cities were discussed by Gilowska et al. (1998) and Zaborowski (2010), who reached contradictory conclusions. Gilowska et al. (1998) argue that the selection of capitals was mainly based on the metropolitan function of the largest cities, their chances to compete internationally, and the availability of human capital needed to manage regional development. They acknowledge, however, that a few small cities were also selected to perform the regional capital role due to their remoteness. Zaborowski (2010), in turn, claims that the assignment of regional capital status was not consistently determined by the position of the city in the urban hierarchy or its features such as size, area of influence, or a tradition of holding an administrative function. Majchrowski (2011) adds to this debate, stating that political bargaining, enabled by the links of local politicians with the then president, also played a role.

3 Regional Capital Status and Local Development

While Poland has one of the most even settlement structures in Europe (Sleszynski, 2018), it has become deeply differentiated and less polycentric (Bartosiewicz & Marcinczak, 2022). Small and medium-sized cities have slid into economic decay and depopulation (Śleszyński, 2019; Wichowska, 2021; Kaczmarek et al., 2022). Among Polish cities allegedly affected by depopulation and loss of their economic base are the former regional capitals that lost their status in the 1998 administrative reform. Some of their inhabitants claim that the reduction in the number of administrative regions and the loss of regional capital status contributed to their demise (Krysiński, 2013). This discontent resembles the regret of relative decline and disconnectedness leading to political radicalization identified in the United Kingdom by Rodríguez-Pose (2018). A similar tendency can be observed in Poland's former regional capitals, as exemplified by the voters of Kalisz, a city in central Poland and one of the former regional capitals, who turned away from the centre-liberal politicians to the right-wing populist 'Law and Justice' party in 2015 and reiterated their support in the 2019 parliamentary elections. Kalisz is relevant here because the perception of the 1998 reform in this city is particularly negative, and the loss of the regional capital status is blamed for the city's problems (Krysiński, 2013).

To compensate for the loss of regional capital status, most of the affected cities were granted county status along with county-level institutions. They were also promised to become locations of the ex-territorial departments of the newly formed regional governments and other public bodies (Potocki & Babczuk, 2015). The question of whether these measures counterbalanced the loss of the regional capital function has been considered by several Polish scholars (see, e.g., Kurniewicz & Swianiewicz, 2016; Kisiała, 2017; Tomaszewski, 2019; Komorowski, 2012). Before reviewing their findings, we identify various channels through which the regional capital function may have affected local prosperity.

Why does regional capital status matter? First, local development can be stimulated by the demand generated by a city's public sector. The larger it is, the more it stimulates local markets, although empirical evidence is not very convincing (Gerritse & Rodríguez-Pose, 2018). Second, Dascher's (2000) assessment of the impact of changing the county-capital status of German cities, complemented with research on national capitals (see, e.g., Hall, 2006; Mayer et al., 2019), suggests that if laws and regulations change frequently, firms prefer to locate in capital cities to have access to government officials and information.

In fact, legislationwise, the 1990s were an especially volatile period in Poland. Third, the presence of a regional government may facilitate the flow of funds and investments from regional budgets, as regional governments tend to support the cities in which they reside (Kurniewicz & Swianiewicz, 2016; Pendras & Williams, 2021). Moreover, the direct access of local politicians to regional administrative structures and decision-makers facilitates lobbying at both the regional and central levels (Barber, 2013). Finally, status can also affect the attractiveness of a city through prestige and cultural institutions, which are usually located in (regional) capital cities (Dascher, 2000) and the potential links with first-tier capital cities (Cardoso & Meijers, 2016).

The hitherto assessments of the 1998 reform's impact on former regional capitals remain ambiguous. Most are based on qualitative or descriptive quantitative methods, mostly making use of only posttreatment data. The interview-based research of Krysiński (2013), focusing on the city of Kalisz, shows that both inhabitants and public executives perceive the reform to be detrimental. It is blamed for increased unemployment, insufficient subsidies, and difficulties in finalizing infrastructural investments. Kurniewicz and Swianiewicz (2016), Kisiała (2017) and Komorowski (2012), in turn, constructed various synthetic indices and rankings based on dimensions such as demographics, entrepreneurship, infrastructure and public finance. The development of these was compared across treated and untreated cities over time. All these analyses, with the exception of Kurniewicz and Swianiewicz (2016), use only posttreatment data, and thus, attributing the disparities to the reform is problematic. Kurniewicz and Swianiewicz (2016) infer from only descriptive statistics (in the form of synthetic indices). In the most recent study, in which Tomaszewski (2019) computed means for indicators spanning demographics, labour markets and entrepreneurship for each year in the period 1998-2017, the former regional capitals are on a concerning path, either stagnating or decaying. However, excluding pretreatment differences and possible drivers of treatment limits the usefulness of these findings.

What emerges from the above literature is the increasing discrepancy between former and current regional capitals. This discrepancy has been frequently attributed to the loss of regional capital status in the literature; however, these studies used identification strategies that do not allow a causal link to be established. This was also identified as an applied research gap in city-region research (Harrison, 2007; Moisio & Jonas, 2018). Our study contributes to the existing debate by analysing whether and to what extent these diverging development trajectories of former and current capitals have been caused by the 1998 reform. The method for doing so is explained in the next section.

4 Methodology and Data

4.1 Difference-in-Differences with Panel Data

We conduct the analysis using a difference-in-differences (DiD) approach, which enables us to identify the causal effects of the policy intervention more convincingly than previously done. In this identification strategy's simplest form, two groups are compared before and after a policy implementation, where both groups of units are untreated before and one group is treated after the policy intervention, while the second group remains untreated. The approach assumes that both groups would have followed parallel paths over time in the absence of treatment, the so-called 'parallel trends assumption' (see Callaway & Sant'Anna, 2021). DiD further accounts for unobserved time-invariant heterogeneity.

In our study, we employ a panel dataset with multiple time periods before and after the reallocation of the regional capital city status in 1999. Note that the reform was passed in 1998 but was enacted as of 1st January 1999. Specifically, we observe the cities four years before the policy change (from 1995 to 1998) and 20 years after (from 1999 to 2019).

We can write our DiD model as follows:

$$y_{it} = \beta_1 * D_t + \beta_2 * x_{it} + \gamma_i + \gamma_t + \epsilon_{it} \quad (1)$$

where y_{it} is the outcome variable for city i at time t, D_t is the treatment variable (1 if city lost the regional capital status, 0 if not), x_{it} are covariates (if applicable), γ_i are city fixed effects, γ_t time fixed effects, and ϵ_{it} is an error term. We are interested in the treatment variable $\beta_1 * D_t$ to determine whether and to what extent the loss of the regional capital status had a significant effect on the outcome variables of interest for the treated cities. The treatment is considered the removal of regional capital status and related institutions from a given city. From the population of pre-1998 regional capitals, some have lost this status, and some have maintained it. Importantly, no cities that did not previously perform this administrative function became capitals due to the reform.

The advantage of a panel DiD model is that we can observe the trends for variables in the years before treatment, thus allowing us to control whether the parallel trend assumption holds. Let $d_{t,0} = 1$ ($d = 0$) indicate pretreatment time periods and $d_{t,0} = 1$ ($d = 1$) indicate

posttreatment time periods. Furthermore, let w_i be a variable that takes the value 1 if the city belongs to the treatment group and 0 otherwise.

We can then estimate:

$$y_{it} = \mathrm{DID}_{it} + w_i d_{t,0} t\zeta_1 + w_i d_{t,1} t\zeta_2 + \epsilon_{it} \quad (2)$$

where the coefficient ζ_1 captures the difference in slopes of trends between the treated and untreated cities before the policy change (i.e., pretreatment period), and ζ_2 captures the difference afterwards (i.e., posttreatment period). For the parallel trends assumption to hold, ζ_1 needs to approximate 0. The same applies to ζ_2, although the posttreatment period is not relevant for assessing the parallel trends assumption and is expected to differ if the policy intervention has had any impact on the treated units.

Differences in the posttreatment trend ζ_2 identify the average treatment effect on the treated (ATET), or differently said, the impact of the policy intervention, the 1998 administrative reform, on the outcome variables of interest.

4.2 Data Description

We make use of data obtained from Statistics Poland, Local Data Bank, from 1995 to 2019. The dataset contains observations from the entire population of the 49 cities that were regional capitals before 1999. Due to the transformation of Poland into a market economy, which started in 1989 and was followed by numerous administrative reforms implemented in the early 1990s, data before 1995 are difficult to obtain and suffer from compromised reliability. We therefore use data starting from the year in which Statistics Poland began tracking relevant indicators. In addition to making use of this database, we also collected information for the prereform period on the political alignment of local governments with the then president or the ruling coalition. We did so by identifying the party affiliation of mayors and members of the city councils in the period preceding the reform.

We organized the outcome variables of interest into four dimensions: (i) economic, (ii) fiscal, (iii) demographic, and (iv) cultural. These dimensions form spheres in which governance transitions can be expected to have an impact (Milenkovic et al., 2014; Senetra & Szarek-

Iwaniuk, 2020), yet we refrain from general composite indicators (McGillivray, 1991; Bristow, 2005).

The economic dimension is captured by the number and area of newly built apartments (flats), the number of public entities, the number of private firms (also by sectors), and the share of the working population.

The fiscal dimension is captured by general subsidies, local government revenues, and investment (shares). We include this dimension for two reasons: to determine whether the ability of local governments to shape local development was reduced, proxied by their own municipal revenues, and the share of their expenditures spent on assets (investment). We also assess how the reform affected the amounts of central government subsidies they receive.

The demographic dimension is captured by the city population, net migration, and the share of children and seniors of the total population. As the depopulation of Poland's small and middle-sized cities is one of their most acute developmental challenges (Śleszyński, 2018; Wichowska, 2021), we try to assess the extent to which the loss of regional capital status contributed to this trend.

Finally, the cultural dimension is captured by cinema visits, libraries (and number of library users), and the number of museums. Due to a lack of available pretreatment data on education, health or welfare - which could be used as indicators of the social aspects of development - we relate only to cultural amenities in this regard. This approach has been used by Becker et al. (2021), who, following Glaeser et al. (2001), argued that the diversity of local amenities, such as theatres, is a symptom of the city's success and considered the influence of capital status on spending on cultural amenities in Bonn. Links between capital city status and the availability of cultural amenities, which are usually subsidized by the state, are likewise mentioned by Dascher (2000).

All the above variables except population, net migration and shares (investment, children, seniors, library users) are reported per capita, per 1,000 or 100,000 inhabitants. Additionally, we have two variables that do not fall into the four categories, namely, the variables indicating political alignment. The selected indicators give a more complete overview of possible impact dimensions than most indicators used in the literature in this field, which focuses primarily on the economic impacts of governance structures and

changes (in city-regions). Table 1 provides an overview of the variables included in the study and their definitions.

5 Results and Discussion

5.1 Descriptive Statistics

Table 2 reports the summary statistics. The variable set contains observations for all years (1995-2019), except for firms by sector (not available after 2009) and political alignment (available for the pretreatment years 1995-1998 only). Regarding the former, the typology of firms substantially changed in 2010. Matching old and new typologies may result in an imprecise classification, and for that reason this method was not used. The latter variable, in turn, was collected for only the pretreatment period, as it served to assess the alleged factors behind being granted regional capital status.

Table 1: Variables and definitions

Variable	Description
Economic dimension	
new flats	Number of new flats built (per 1,000 inhabitants)
new flats area	Square metres of new flats area (per 1,000 inhabitants)
firms pub	Public sector institutions (per 1,000 inhabitants)
firms priv	Private sector firms (per 1,000 inhabitants)
firms sector	Firms in, respectively, manufacturing, construction, wholesale & retail, and high-skilled services (per 1,000 inhabitants)
working pop	Share of working population (of total population, in %)
Fiscal dimension	
subsidy	General subsidy in 1995 PLN (per capita)
own rev	Local government's own revenues in 1995 PLN (per capita)
investment	Local government's investment expenditure in 1995 PLN (per capita)
investment sh	Local government's investment as a share of total expenditure (in %)
Demographic dimension	
population	Total city population (absolute number)
ln population	Total city population (log-transformed)
children	Share of children under the age of 14 (of total population, in %)

seniors	Share of people of postproductive age (of total population, in %); the retirement age assumed is 64 for men and 59 for women
net migration	Difference between number of people permanently emigrating from and immigrating to a city (in 1,000's)
Cultural dimension	
cinema vis	Number of cinema visits (per capita)
Libraries	Number of libraries (per 100,000 inhabitants)
library users	Share of library users (of total population, in %)
museums	Number of museums (per 100,000 inhabitants)
Other variables	
AWS	Political alignment with ruling coalition (AWS-UW) (1 if aligned).
SLD	Political alignment with the president (SLD party) (1 if aligned).

Source: Authors' own compilation.

The summary statistics show that population size and composition vary substantially (e.g., city size varies from as low as 42,000 to as high as 1.8 million inhabitants). They also show large differences in housing (area) growth, net migration, the use of cultural amenities, investment (shares), public institutions and firms (in various sectors).

Table 2: Summary statistics

Variable	Obs	Mean	Std. dev.	Min	Max
year	1,225	-	-	1995	2019
treatment	1,225	0.53	0.50	0	1
future tr	1,225	0.63	0.48	0	1
new flats	1,225	3.82	2.48	0.02	17.73
new flats area	1,225	301.38	153.63	2.53	1059.64
firms pub	1,225	3.33	1.89	0.93	13.41
firms priv	1,225	112.75	26.54	42.37	238.23
firms manufacturing	735	10.01	2.97	4.30	18.73
firms construction	735	10.07	2.84	3.78	17.72
firms wholesale retail	735	37.60	6.15	18.28	53.17
firms highskilled_services	735	17.29	7.11	5.11	52.40
working pop	1,225	32.49	7.13	19.98	58.90
subsidy	1,225	389.62	167.24	9.41	1,078.57
own rev	1,225	746.35	405.16	142.26	2,708.59
investment	1,225	312.44	264.97	29.46	1,995.31
investment sh	1,225	16.99	7.47	3.08	49.86

population	1,225	216,894	279,018	41,953	1,790,658
ln population	1,225	11.84	0.86	10.64	14.40
children	1,225	15.65	3.59	6.12	36.90
seniors	1,225	17.34	6.18	5.51	57.15
net migration	1,225	-86.65	1,104.49	-3,121	10,903
cinema vis	1,225	1.95	1.39	0	6.63
libraries	1,225	10.69	3.03	3.67	19.72
library users	1,225	22.72	6.41	10.07	43.34
museums	1,225	2.42	1.59	0	9.87
AWS	196	0.59	0.49	0	1
SLD	196	0.24	0.43	0	1

Source: Authors' own compilation.

5.2 Regression Results and Discussion

5.2.1 Treatment Assignment

To understand whether treatment was driven by certain city characteristics that should be controlled for, we run probit regressions with different characteristics from the year before the administrative reform. In Table 3, we test five specifications where we add variables that were significantly different between the groups (see Table A1 in the Appendix). In addition to significant differences in the mean, we focus on variables that we regard as sensible to consider, i.e., it is unlikely that cinema visits or the number of library users drove treatment.

The results show that city size is significant in all regressions. For cities with a larger population, the chances were lower to be in the treatment group, i.e., to lose regional capital city status. Specifically, for every 1% of additional population, the probability of losing regional capital city status is 0.44% lower in Regression (1) and between 0.28% to 0.61% lower in the other specifications. Net migration, local government revenues (per capita), city general subsidies (per capita) and private sector firms (per 1,000 inhabitants) are significant in Regression (1) but the coefficients, excluding net migration, are miniscule. Once controlling for other factors, however, most variables, e.g., the share of children in Regression (2), specific sector firms in Regression (3), and political alignment with either the ruling coalition or the president (Regressions (4) and (5), respectively), are no longer significant. Having more firms in the high-skilled services sector is significant in Regressions (3) and (4), with the expected negative sign but again with a a small coefficient. Overall, the

regressions suggest that only the population size is significantly correlated with treatment throughout the regressions, with other variables showing a less stable outcome.

Table 3: Probit regressions (average marginal effects)

	(1)	(2)	(3)	(4)	(5)
ln population	-0.44***	-0.31***	-0.28***	-0.31***	-0.61*
	(0.10)	(0.06)	(0.07)	(0.10)	(0.35)
net migration	-0.22**	-0.15	-0.11	-0.12	-0.01
	(0.09)	(0.10)	(0.11)	(0.15)	(0.12)
subsidy	-0.01*				
	(0.00)				
own rev	-0.00**	-0.00*	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
firms priv	-0.01**	-0.00			
	(0.00)	(0.00)			
children		0.00			
		(0.02)			
firms construction			0.01		
			(0.02)		
firms services			-0.03***	-0.02***	-0.05
			(0.01)	(0.01)	(0.03)
AWS				-0.04	
				(0.07)	
SLD					-0.21
					(0.16)
N	49	49	49	49	49

Based on the results of the probit regressions, we add population size to the difference-in-differences regressions as a control variable to account for the lower likelihood of treatment for larger cities as well as for agglomeration effects (Puga, 2010).

5.2.2 Treatment Effect Estimation

We continue our analysis by running panel difference-in-differences regressions for three posttreatment time periods (5, 10 and 20 years). We further assess the parallel trends assumptions ($\zeta_1 = 0$) for all variables in the dataset. For the former, we make use of all data

from 1995 to 2019; for the latter, we make use of the pretreatment period from 1995 to 1998.

In the regression tables, we report the average treatment effect on the treated (ATET) for 5, 10 and 20 years, the coefficient of the control variable (*ln population*), the number of observations, and the parallel trends test (*ptrends*). The coefficient of the control variable and the number of observations are reported for only the 20-year period[6]. The parallel trends tests report the significance level for H_0*: linear trends are parallel*. For the parallel trends assumption to hold, the outcome of the parallel trends test must be above the critical value of 0.1, i.e., we fail to reject the null hypothesis.

5.2.3 Discussion of the Results

Our estimations indicate that the volatile political process of the delimitation of new regions and the selection of new regional capitals has benefited some cities while being detrimental to the other ones. Although this institutional reconfiguration does not explain the entire difference in socioeconomic development between the concerned cities, it plays a nontrivial role (e.g., it explains approximately half of the difference in economic activity as measured by the number of private firms). Moreover, most of these negative effects were already noticeable five years after the reform was implemented and grew in magnitude over time. Some effects, however, needed time to occur. To understand how exactly the relation between the loss of regional capital status and local socioeconomic development unfolded, we need to turn to each of the analysed dimensions.

Economic dimension

Table 4 reports the results for the economic development variables, argued explicitly as key variables in the city-region literature. We control for population size due to its significance in the probit regressions and the agglomeration effects. We observe significant differences between treatment and control cities in all specifications, with the only exception being public entities in the 20-year period. For all economic development variables, the parallel trends assumption was met.

[6] The number of observations is 490 for the 5 years' time period, and 735 for the 10 years' time period.

The loss of regional capital status has thus taken a toll on the analysed cities, as reflected by its negative impact on the number of newly built flats and their total area, the number of public entities and private firms, and the share of the working population. The effect magnitude has increased over time, except for public institutions, where it started to wane after five years. While treated cities still experienced an increase in the analysed variables such as newly built flats (and flat areas) and private firms, the growth was substantially lower than in the cities that maintained regional capital status (see Figure A1 in Appendix D). The reform is therefore not responsible for the entirety of the growing economic disparities between the former and current capitals, but its influence is sizeable and noticeable in all the analysed variables.

Table 4: Economic dimension

	(1)	(2)	(3)	(4)	(5)
	new flats	new flats area	firms pub.	firms priv.	working pop.
ATET					
20 years	-1.644***	-82.252**	-0.383	-14.132***	-2.539***
	(0.529)	(31.651)	(0.435)	(3.685)	(0.631)
10 years	-1.173***	-54.254*	-0.800*	-8.926***	-1.345**
	(0.434)	(28.249)	(0.478)	(3.093)	(0.516)
5 years	-0.885**	-36.515	-1.184**	-5.879**	-1.022**
	(0.395)	(26.369)	(0.477)	(2.718)	(0.487)
Controls					
(ln)population	16.730***	1014.193***	-7.085*	24.994	-1.408
	(5.889)	(337.505)	(4.052)	(32.316)	(5.774)
ptrends	0.647	0.765	0.772	0.815	0.995
N	1,225	1,225	1,225	1,225	1,225

Note: Controls and *N* reported for 20 years only.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Assuming a stronger government presence in a regional capital city, we expected to find a decreasing number of public entities in treated cities. Indeed, in the 5- and 10-year periods, a sizable loss of ca. one public institution per 1,000 inhabitants can be attributed to the reform. In the 20-year period, however, the coefficient is no longer significant.

Turning to private firms, we note that the overall difference in the mean number of private firms (per 1,000 inhabitants) between the two groups of cities over the entire posttreatment period is 29.340 (see Table A2 in Appendix B), while our model indicates that a loss of regional capital status corresponds to, on average, a loss of 14.132 firms per 1,000 inhabitants over this period. Hence, it explains approximately half (48%) of the observed difference.

The negative impact of the loss of regional capital status on economic activity seems to be dispersed across several sectors instead of inducing a collapse of one or two specific branches of the local economies. We run a set of regressions to study these sectoral impacts in the industries in which most firms operate, namely, (1) manufacturing, (2) construction, (3) wholesale and retail, (4) transport and tourism, (5) financial services, (6) high-skilled services, (7) education, and (8) health care, and report the results in Table 5.

All sectors, except wholesale and retail and transport and tourism, were negatively affected by the reform. Moreover, by comparing the coefficients of the 5- and 10-year periods after the reform, we observe that the negative impact increased over time. Only firms operating in the wholesale and retail and transport and tourism sectors were not significantly affected. In the case of the former, the coefficient is positive but not significant; in the case of the latter, the coefficient is negative and again not significant.

Although the impact of the reform is significant and negative in most sectors, for some of them, namely, construction, financial and high-skilled services, the parallel trends assumption is violated. This suggests that a difference in trends had already occurred before the reform. We nevertheless notice, by visually inspecting the linear trends (see Figure A2 in Appendix D) and the evolution of the observed means, an increasing gap between the two categories of cities after the reform. For other sectors, namely, manufacturing, education and health care, the parallel trends assumption is met; hence, we have more confidence in linking compromised growth in these industries with the reform.

Finally, the analysis attributes a decrease of 2.5 percentage points in the share of the working population to the loss of regional capital status, a noticeable impact corresponding to approximately 40% of the mean discrepancy between the former and current regional capitals, calculated over the entire period of the analysis. Lower levels of employment can be linked to the compromised economic activity of the private entities and reduced size of

the public sector in the affected cities, which adds to the already bleak picture of the development trajectories of the former regional capitals.

Table 5: Economic dimension, by sector

	(1) manufact.	(2) construction	(3) wholes., retail	(4) trans. and tourism
ATET				
10 years	-0.741**	-1.014***	0.289	-0.483
	(0.367)	(0.342)	(1.318)	(0.299)
5 years	-0.652*	-0.963***	0.779	-0.314
	(0.352)	(0.332)	(1.166)	(0.268)
Controls				
(ln)population	-7.932*	-7.445	-35.198*	0.264
	(4.507)	(4.494)	(18.202)	(5.398)
ptrends	0.329	0.055	0.023	0.646
	(5) finance	(6) hsk. services	(7) education	(8) health care
ATET				
10 years	-0.418**	-4.823***	-0.309***	-0.664***
	(0.163)	(0.880)	(0.076)	(0.244)
5 years	-0.175	-3.602***	-0.189***	-0.404*
	(0.146)	(0.683)	(0.062)	(0.220)
Controls				
(ln)population	-1.382	-19.252	0.388	-0.776
	(2.399)	(19.575)	(1.409)	(3.133)
ptrends	0.009	0.002	0.358	0.824
N	735	735	735	735

Note: Controls and *N* reported for 10 years only.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Fiscal dimension

At first sight, the regression results run for the financial variables seem to suggest that the reform of 1998 took a toll on the financial capacity of the affected municipalities. As mentioned earlier, we included the financial dimension to determine whether the ability of local governments to induce local development, proxied by their own municipal revenues and the share of their expenditures spent on assets (investment), was reduced. We also wanted to assess how the reform has affected transfers from the central government. This is especially interesting, as the central government subsidy includes a compensatory part. Hence, its higher levels per capita may imply financial and economic difficulties such as lower tax revenues and higher spending on social housing, key components of the subsidy allocation algorithm.

Table 6 contains the regression results. We observe significant treatment effects for all the coefficients except municipal investment expenditure (per capita). The local government's own revenues (per capita) were negatively impacted, and the magnitude of the effect increased over time. Additionally, general subsidies have significantly and progressively increased at over 5, 10 and 20 years. Finally, the local governments' investment expenditure as a share of total expenditure was also negatively affected. For this indicator, the magnitude of the impact somewhat decreased over the three observed periods.

Table 6: Fiscal dimension

	(1)	(2)	(3)	(4)
	own rev.	subsidy	investment	investm.(%)
ATET				
20 years	-202.118***	65.134***	13.148	-6.599***
	(43.961)	(23.606)	(30.110)	(1.665)
10 years	-139.200***	55.544***	-0.694	-6.748***
	(35.444)	(19.605)	(22.239)	(1.716)
5 years	-84.140***	45.434**	-1.968	-7.154***
	(22.993)	(18.433)	(19.689)	(1.917)
Controls				
(ln)population	248.001	90.184	230.416	-5.385
	(347.815)	(120.153)	(219.087)	(11.405)

ptrends	0.020	0.093	0.121	0.027
N	1,225	1,176	1,225	1,225

Note: Controls and *N* reported for 20 years only. Subsidy per capita from 1996 onwards, as there were unusual subsidy levels in some cities in 1995.
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Despite significant differences in the posttreatment periods between current and former regional capitals in municipal own revenues, investment share and per capita subsidy, our findings are not straightforward. These variables do not satisfy the parallel trends assumption, thus preventing us from attributing discrepancies to the reform. In fact, public finances in Poland, including those of local governments, were reformed and tweaked multiple times during the 1990s which may be a reason of the compromised parallel trends assumption.

In particular, the structure of the general subsidy has been changed by the municipal finance reform, which has been effective since 1996 (Polish Parliament, 1995). Several cities noted unusually low levels of per capita subsidies in 1995, a year that is included in the parallel trends assumption test for the period 1995-1998. If the trend is plotted from 1996 onwards for this variable (as done in Table 6), the assumption is still not met, but the p value increases from 0.002 to 0.093. We then observe a sizable treatment effect on the treated, corresponding to approximately 60% of the difference between both groups. Associating this treatment effect with the loss of administrative status may, however, still be misleading. The territorial reform was accompanied by yet another reform, imposing temporary modifications in the local government finances until 2003. While these two bills were related, their entanglement and complexity obfuscate the channels and reform's impact's magnitude rendering our identification strategy imprecise in this regard.

Demographic dimension

Table 7 shows the results for the variables capturing city demographics. Regression (1), with (ln)population as the dependent variable, does not contain any controls; all other regressions, as mentioned earlier, control for city population.

Table 7: Demographic dimension

	(1)	(2)	(3)	(4)
	(ln)population	net migration	children	seniors
ATET				
20 years	-0.024*	0.060	-1.694***	0.683**
	(0.014)	(0.270)	(0.504)	(0.319)
10 years	-0.011	0.194	-1.042***	0.321
	(0.009)	(0.235)	(0.381)	(0.219)
5 years	-0.009	0.094	-0.601**	0.218
	(0.008)	(0.174)	(0.297)	(0.166)
Controls				
(ln)population		4.968*	7.145	-8.140*
		(2.284)	(4.155)	(3.692)
ptrends	0.013	0.393	0.704	0.104
N	1,225	1,225	1,225	1,225

Note: Controls and *N* reported for 20 years only.
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

We sought to determine the degree to which the reform contributed to the loss of population, one of Poland's middle-sized cities' main problems (Śleszyński, 2018; Wichowska, 2021) and an important indicator of their condition. We observe a significant impact (at 10%) of the loss of regional capital status on city population, but only in the longest analysed period of 20 years (comparable to Walaszek & Wilk (2022)). The parallel trends assumption is, however, compromised for this variable. A visual inspection of trends in (ln)population (see Figure A4 in Appendix D) indicates that population increased in treated cities before the reform and sharply declined after 2002. While both groups experienced a population loss after the reform, the decline was substantially more pronounced in the cities that lost their regional capital status. Net migration in turn was not significantly affected.

A possible explanation of these results may stem from the fact that population and net migration estimates provided by Statistics Poland for the period of 1995-1998 are of limited reliability (Statistics Poland, 2022)[7]. Even for more recent time periods, data on migration need to be treated with caution due to estimation difficulties faced by Statistics Poland. However, despite such caveats, these data are used by Poland's government and researchers.

Śleszyński (2018) and Wichowska (2021) argue that Poland's medium-sized cities are depopulating and facing demographic challenges. As noted above, we cannot, however, attribute the alleged depopulation of the former regional capitals to the 1998 reform, as population estimates provided by Statistics Poland may not be telling the full story.

What the analysis does reveal is a growing age-dependency ratio in the treated cities. The loss of regional capital status has negatively affected the share of children and led to an increase in the share of the postproductive age group. It is a telling finding that these indicators, which are less prone to underrepresentation due to the limited mobility of children and seniors (Banaszek, 2019), capture the growing demographic problem of the former regional capitals.

These findings should be viewed in light of pre-1995 population growth of the former regional capitals. Stasiak (1997) contends that granting the regional capital status to smaller cities in 1975 and the subsequent investment in industry set them on a rapid development path. He does not provide data allowing for comparison of this dynamic with other cities, but the stark contrast between the substantial population growth in the period of 1950-1995 with the stagnation of population levels as of 1998 and the increasing age-dependency henceforth, unlike in the current capitals, suggests that taking away the regional capital status could have influenced local demographics. Furthermore, in the 1950-1995 period, Poland's population increased by 55% (Statistics Poland, 2021), while the population of the former regional capitals grew on average by 255% (Stasiak, 1997).

Cultural dimension

Finally, Table 8 reports a set of variables that were used as proxies for the cultural dimension of a city's development trajectory. The availability of cultural amenities can be indicative of a city's success (Glaeser et al., 2001) and is potentially linked to its administrative status

[7] One of the key reasons for the limited reliability is that both Polish and foreign residents rarely register their change of residence when moving within the country.

(Dascher, 2000). Our findings reveal a somewhat negative impact of the reform, but they are not robust. Although cinema visits, number of libraries (per 100,000 inhabitants) and library users as a share of total population appear significantly affected, with the magnitude of the treatment effect increasing over time, the former two variables fail the falsification tests discussed in the next section, while the latter does not satisfy the parallel trends assumption. There is a sizeable discrepancy between the treated and untreated cities in terms of the availability and usage of cultural infrastructure, but it cannot be unequivocally attributed to the reform.

Table 8: Cultural dimension

	(1)	(2)	(3)	(4)
	cinema vis.	libraries	library users	museums
ATET				
20 years	-0.699***	-1.103**	-3.389***	-0.239
	(0.179)	(0.538)	(1.244)	(0.156)
10 years	-0.865***	-1.088**	-1.397	-0.169
	(0.160)	(0.422)	(1.274)	(0.124)
5 years	-0.466***	-0.944**	-0.340	-0.141
	(0.130)	(0.360)	(1.042)	(0.103)
Controls				
(ln)population	1.447	0.962	11.226	0.260
	(1.580)	(4.026)	(11.457)	(2.399)
ptrends	0.324	0.443	0.048	0.150
N	1,225	1,225	1,225	1,225

Note: Controls and *N* reported for 20 years only.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.3 Robustness

To test the robustness of our findings, we conduct two falsification tests. The first test uses the same control group as the main analysis (cities that maintained the regional capital status

after the reform) but an alternative treatment group, namely, cities with a county status that never had the regional capital function. In Poland, 17 of such 'nontreated' county cities existed in 2019, the last year of our analysis. The 'nontreated' county status cities were chosen as a placebo treatment group because they are similar in population size (mean and distribution) and have the same administrative function as the former regional capitals, which are also, in their majority, cities with a county status. The second test, in turn, uses the county cities that were not former regional capitals as the control group and the same treatment group as the main analysis (cities that lost the regional capital status after the reform and now have the county status). To recap, one group of cities, county cities that have never been a regional capital, is used twice - once as placebo control and once as a placebo treatment group. We do not run models with anticipated or postponed placebo treatment due to the short pretreatment period and constant treatment after 1999.

For the first falsification test, we run regressions with the variables that were significant in the main analysis and satisfied the parallel test assumption. Two variables are significant in this alternative set-up: (1) private entities per 1,000 inhabitants, which, however, do not meet the parallel trends assumption and thus cannot be treated as a refutation of the results of the main analysis; and (2) cinema visits per capita, which satisfy the parallel trends requirement. The robustness of the variable 'cinema visits' thus needs to be treated with caution.

In the second falsification test, the same set of regressions as in the first falsification test was used. Two variables are significant in this case: (1) new flats area per 1,000 inhabitants and (2) libraries per 100,000 inhabitants. The first variable does not satisfy the parallel pretreatment trends requirement, while libraries (per 100,000 inhabitants) do.

To conclude, these two types of tests have positively validated the robustness of all the relevant findings, except 'cinema visits' and 'number of libraries'. Interestingly, the second falsification exercise reveals two additional and telling relations. Private entities per 1,000 inhabitants in the former regional capitals are converging with the values observed in the remaining county cities. The same can be noticed for the share of the working population.

Finally, we also analysed the number of private entities per 1,000 inhabitants and the share of the working population using allocated European Union funds per capita (in 1,000s of 1995 PLN) in each city as an additional control[8]. European Union funds could be expected to,

[8] We did so only for the longest period (20 years), due to the availability of data from 2011 onwards.

at least to some degree, mitigate the negative development tendencies. The results show that our findings regarding the above variables still hold after the addition of this control (see Table A3 in Appendix C). European funds have had a positive effect on the number of private entities and the share of the working population, but although they are significant, their inclusion in the models reduced the negative treatment effects only slightly.

6 Conclusions

The local government reform of 1990 is often labelled one of the biggest successes of Poland's transition to a market economy. The second territorial government reform, which reduced the number of voivodeships and introduced the county-level in 1999, did not earn such unequivocal praise. Among various criticisms, its impact on a group of middle-sized cities denied regional capital status has recently gained currency and has been analysed in this study. Specifically, we investigated the development trajectories of cities that maintained the regional capital status and compared them to those that lost it, evidencing the negative impact of administrative degradation on a set of economic and demographic indicators. In doing so, we expand Dascher's (2000) finding that capital city status plays an important role in the development of county capitals to the Polish context. Moreover, our research contributes to the literature on the decay of middle-sized cities, where studies of marginalisation through institutional processes are lacking (Haase et al., 2014), and on city-region development, where a lack of research on decentralization and morphological and functional restructuring constitutes a research gap.

What sets this analysis apart from the literature on the former regional capitals in Poland, including Krysiński (2013), Kurniewicz and Swianiewicz (2016) and Kisiała (2017), is (i) the usage of a more comprehensive dataset, i.e., a panel spanning the period from 1995 to 2019; (ii) the extended understanding of local development, which includes the cultural dimension on top of economic, fiscal and demographic ones; and (iii) foregoing the hitherto methods based on descriptive statistics and rankings in favour of panel difference-in-differences regressions. Unlike the former methods, our approach allows establishing identified causal inference and attributing parts of the observed developmental disparities between former and current regional capitals to the 1998 reform.

The types of disparities found in this research add a strong argument to the abovementioned literature and suggest that the thus far inconsistent judgement of the reform's impact should be clearly seen as negative. The denial of the regional capital status has indeed led to lower economic activity and an increased age-dependency ratio in the affected cities. Higher levels of general subsidies per capita do not offset these negative tendencies. Second-tier cities that perform relatively well in a general European context (Dijkstra et al., 2013) seem hampered in this case.

Policy implications and further research

The current Polish government is, to an extent, aware of the problematic socioeconomic situation of these smaller agglomerations and has implemented a dedicated support programme aimed at fostering public and private investment in these middle-sized cities (Ministry of Development Funds and Regional Policy, 2019). Whether the measures undertaken through this policy are sufficient to cover the hollow left by removing the seats of regional governments is yet to be determined. Initial evaluations are not so optimistic due to the low interest of the targeted cities in the offered funds and programmes (Supreme Audit Office, 2021). Earlier policies, such as "Dialog i rozwój", designed to compensate for the negative consequences of the degraded administrative status, were often criticized for not delivering the needed stimulus (Kurniewicz & Swianiewicz, 2016). What could have been done differently? One option is further decentralization measures (see, e.g., Śleszyński, 2018), conditioned by good regional governance (Rodríguez-Pose & Muštra, 2022). This, however, would not be a quick win in policy terms. A concrete policy in this vein could be the relocation of some of the public institutions currently clustered in Warsaw and other large agglomerations to middle-sized cities. This could be a promising idea in the long term, and initial but comprehensive contours of such a policy have been put forwards by Śleszyński (2018).

We join MacKinnon et al. (2021) in arguing that 'left behind places', even if they are receiving (some) attention, have been overlooked by spatial policies that tend to favour larger agglomerations. The claims of Kinossian (2018) and Feldman et al. (2021) that policies pursuing growth did not improve the socioeconomic conditions of lagging places could also be applicable to Poland's middle-sized cities (Mikuła, 2022). A possible, yet speculative, way ahead, as it was not the focus of our study, may be revising the growth paradigm and complementing it by a contextualized, place-based understanding of prosperity that could inform solutions in the spirit of neo-endogenous development (Dobbins et al., 2014;

MacKinnon et al., 2021). This approach would require combining community-based, bottom-up initiatives and framings of prosperity with conventional economic indicators and policies, as well as cooperation across various layers of government (MacKinnon et al., 2021).

In our research, we have grasped the impact of the reform on various economic indicators but were able to provide only a cursory analysis of its influence on the social and cultural infrastructure. This limitation is caused by the lack of relevant pretreatment data in the depositories of Statistics Poland. To be able to design neo-endogenous policies for affected cities, a thorough understanding of their social infrastructure, including social care institutions, education, health and housing (Inderst, 2020), will be essential. This gap is a promising avenue for further research. Another is further studying the effect of the reform on fiscal indicators. Local government finance, especially in the 1990s, was subject to multiple reforms. This volatility, along with the strong relation of municipal revenues with the condition of the local economy, may have posed too much of a challenge for our identification strategy spanning a long period and, by necessity, operating at the level of means. A detailed case study, methodologically better suited for dealing with legal and financial nuances, could reveal the impact of the reform on the financial performance of the affected municipalities and consequently their ability to shape socioeconomic development.

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Appendices

A Appendix

Table A1: T-tests

	1998					<1999			
Variable	non-treated	treated	ttest	sig.	Variable	non-treated	treated	ttest	sig.
new flats	3.72	3.29	0.4297		new flats	3.27	2.75	0.0417	**
new flats area	267.13	262.97	0.8773		new flats area	235.19	219.86	0.3662	
firms pub	1.95	2.17	0.4636		firms pub	1.60	1.89	0.0016	***
firms priv	106.12	91.18	0.0004	***	firms priv	95.81	81.22	0.0000	***
firms manufacturing	11.10	9.15	0.0210	**	firms manufacturing	10.51	8.78	0.0001	***
firms construction	11.14	8.97	0.0008	***	firms construction	9.51	7.69	0.0000	***
firms wholesale retail	38.88	36.56	0.1502		firms wholesale retail	38.01	34.28	0.0001	***
firms HS services	17.46	11.92	0.0000	***	firms HS services	15.17	10.60	0.0000	***
working pop	37.98	34.26	0.0511	*	working_pop	37.60	33.85	0.0000	***
subsidy	142.51	164.05	0.0002	***	subsidy	124.10	135.33	0.0919	*
own rev	342.14	233.98	0.0015	***	own rev	300.31	224.68	0.0000	***
investment	227.76	207.92	0.6563		investment	177.63	182.59	0.8005	
investment sh	21.61	21.77	0.9361		investment sh	19.64	22.70	0.0179	**
population	430,899	96,670	0.0000	***	population	432,109	96,397	0.0000	***
ln population	12.71	11.37	0.0000	***	ln population	12.71	11.37	0.0000	***
children	17.31	20.36	0.0021	***	children	18.63	21.52	0.0000	***
seniors	15.28	12.09	0.0270	**	seniors	14.84	11.57	0.0000	***
net migration	277.83	-2.00	0.0437	**	net migration	363.85	47.87	0.0000	***
cinema vis	1.30	0.78	0.0000	***	cinema vis	1.40	0.86	0.0000	***
libraries	10.55	12.43	0.0517	*	libraries	10.71	12.69	0.0000	***
library users	21.19	27.55	0.0003	***	library users	20.88	26.34	0.0000	***
museums	1.93	1.90	0.9128		museums	1.89	1.93	0.8035	
AWS	0.33	0.74	0.0043	***	AWS	0.33	0.74	0.0000	***
SLD	0.17	0.29	0.3422		SLD	0.17	0.29	0.0527	*

Source: by authors.

B Appendix

Table A2: Differences in mean, post-treatment

Variable	Treatment: No	Treatment: Yes	Difference
Economic dimension			
new flats	5.618	3.041	**2.577**
new flats area	393.091	270.971	**122.120**
firms pub	3.578	3.657	**-0.079**
firms priv	136.293	106.963	**29.330**
working pop	35.931	29.676	**6.255**
Economic dimension, by sector			
manufacturing	11.740	9.349	**2.391**
construction	12.434	9.682	**2.752**
wholesale retail	40.250	37.188	**3.062**
transport tourism	10.125	8.122	**2.003**
financial services	5.494	4.601	**0.893**
high-skilled services	24.930	15.743	**9.187**
education	2.052	1.672	**0.380**
healthcare	6.556	5.851	**0.705**
Fiscal dimension			
own rev	1019.932	736.185	**283.747**
subsidy	382.653	471.460	**-88.807**
investment	329.596	342.129	**-12.533**
investment sh	18.277	14.865	**3.412**
Demographic dimension			
ln population	12.698	11.333	**1.365**
net migration	0.104	-0.273	**1.365**
children	14.082	15.105	**-1.023**
seniors	19.718	17.326	**2.392**
Cultural dimension			
cinema vis	2.925	1.656	**1.269**
libraries	9.912	10.763	**-0.851**
library users	21.278	23.079	**-1.801**
museums	2.647	2.446	**0.201**

Source: by authors.

C Appendix

Table A3: Economic dimension, EU funds

	(1) new flats	(2) new flats area	(3) firms pub.	(4) firms priv.	(5) working pop.
ATET	-1.488**	-73.220*	-0.468	-12.570***	-2.265***
	(0.521)	(31.010)	(0.451)	(3.548)	(0.621)
Controls					
(ln)population	15.000**	914.300**	-6.138	7.748	-4.446
	(5.418)	(304.900)	(4.111)	(31.260)	(5.996)
EU funds	0.373*	21.540*	-0.204*	3.717***	0.655**
(in 1,000's)	(0.159)	(10.090)	(0.089)	(0.733)	(0.243)
N	1,225	1,225	1,225	1,225	1,225

Note: EU funds in 1,000's of 1995 PLN per capita; 20 years period only.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Fiscal dimension, EU funds

	(1) own rev.	(2) subsidy	(3) investment	(4) investm.(%)
ATET	-185.700***	65.700**	21.850	-6.097***
	(42.470)	(22.730)	(26.300)	(1.656)
Controls				
(ln)population	66.590	83.220	134.100	-10.940
	(357.900)	(127.700)	(232.500)	(10.490)
EU funds	39.100***	1.410	20.760	1.198
(in 1,000's)	(9.939)	(5.634)	(21.690)	(0.644)
N	1,225	1,176	1,225	1,225

Note: EU funds in 1,000's of 1995 PLN per capita; 20 years period only.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Demographic dimension, EU funds

	(1) (ln)population	(2) net migration	(3) children	(4) seniors
ATET	-63.500	0.074	-1.558**	0.652*
	(6,926.800)	(0.276)	(0.481)	(0.291)
Controls				
(ln)population		4.812*	5.642	-7.795
		(2.380)	(4.252)	(3.900)
EU Funds	2,110.900	0.034	0.324**	-0.075
(in 1,000's)	(1,425.900)	(0.041)	(0.099)	(0.144)
N	1,225	1,225	1,225	1,225

Note: EU funds in 1,000's of 1995 PLN per capita; 20 years period only.
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A6: Cultural dimension, EU funds

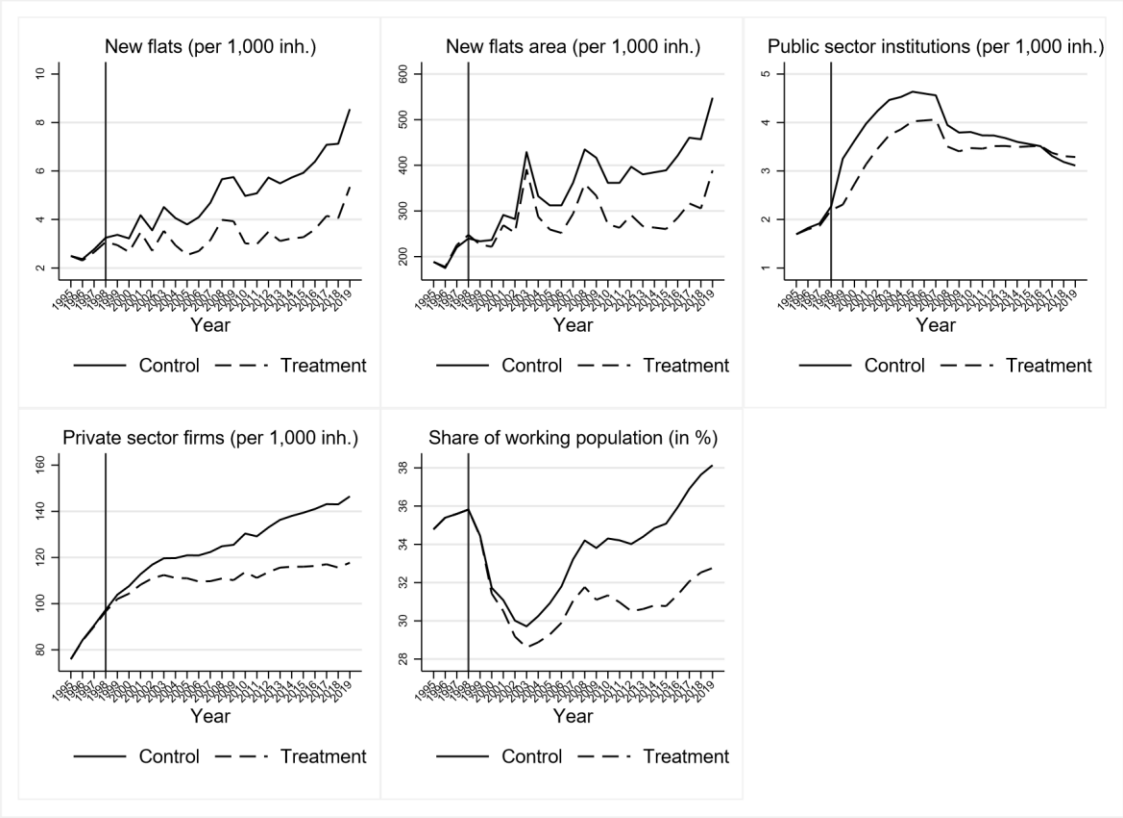
	(1) cinema vis.	(2) libraries	(3) library users	(4) museums
ATET	-0.749***	-1.073*	-2.672*	-0.177
	(0.175)	(0.510)	(1.206)	(0.145)
Controls				
(ln)population	1.996	0.630	3.293	-0.416
	(1.774)	(4.101)	(11.550)	(2.221)
EU funds	-0.118	0.072	1.710**	0.146
(in 1,000's)	(0.098)	(0.168)	(0.501)	(0.085)
N	1,225	1,225	1,225	1,225

Note: EU funds in 1,000's of 1995 PLN per capita; 20 years period only.
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

D Appendix

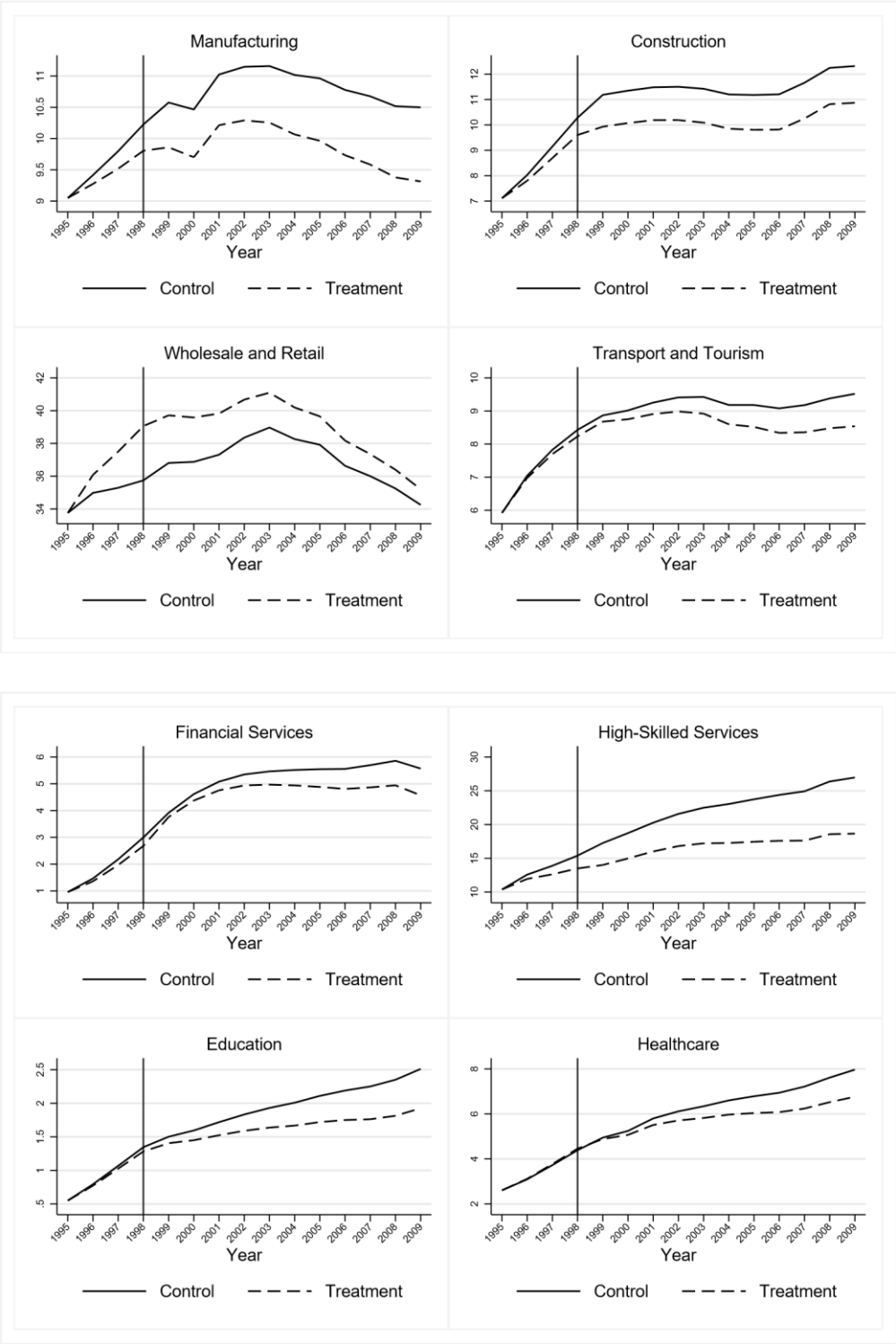
Please note that charts in the Appendix D depict linear trends, not the observed means. The trend lines of both groups start from a single common point in order to facilitate the visual inspection of their pre-treatment parallelism.

Figure A1: Linear trends, economic dimension



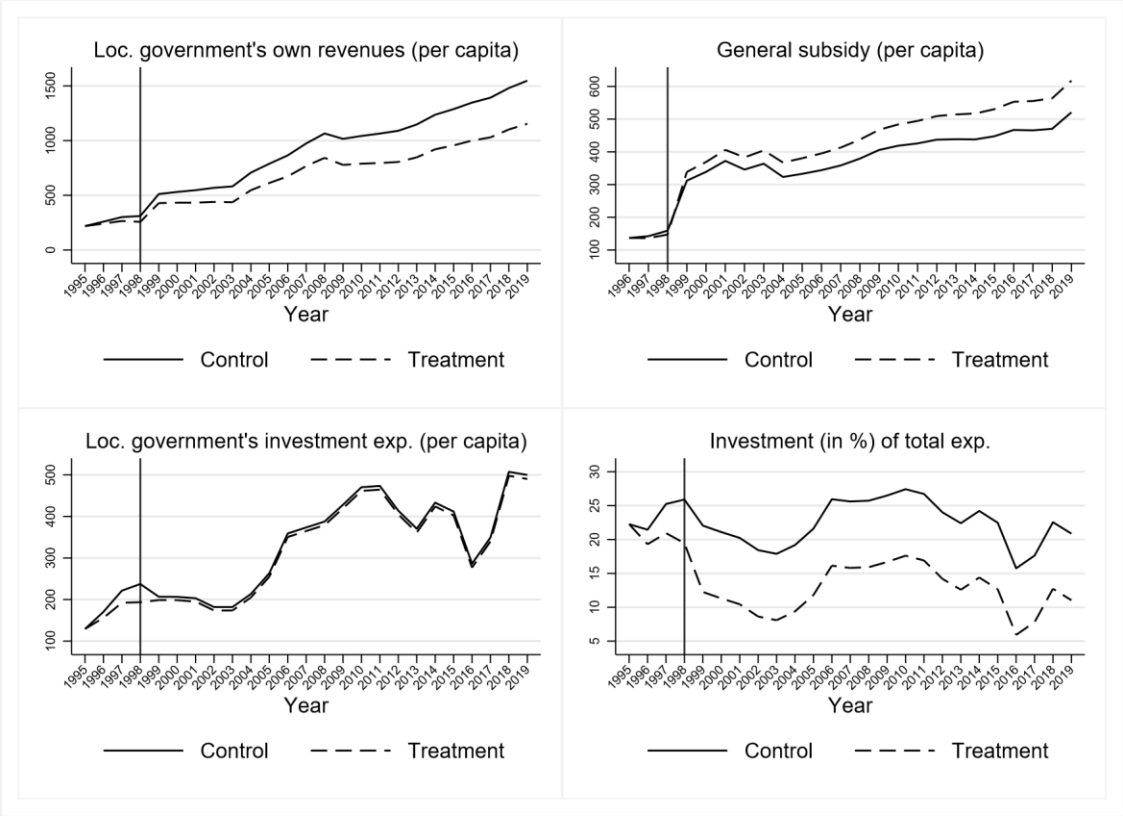
Data source: Statistics Poland.

Figure A2: Linear trends, economic dimension by sector



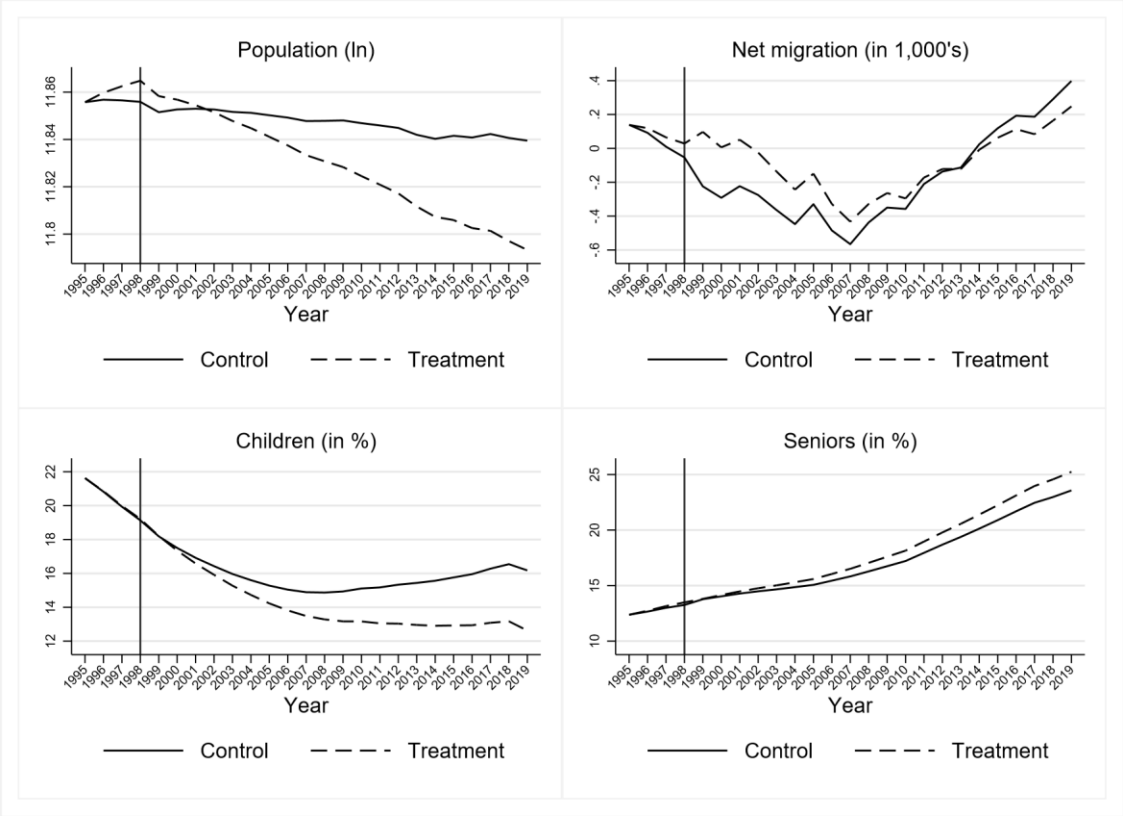
Data source: Statistics Poland.

Figure A3: Linear trends, fiscal dimension



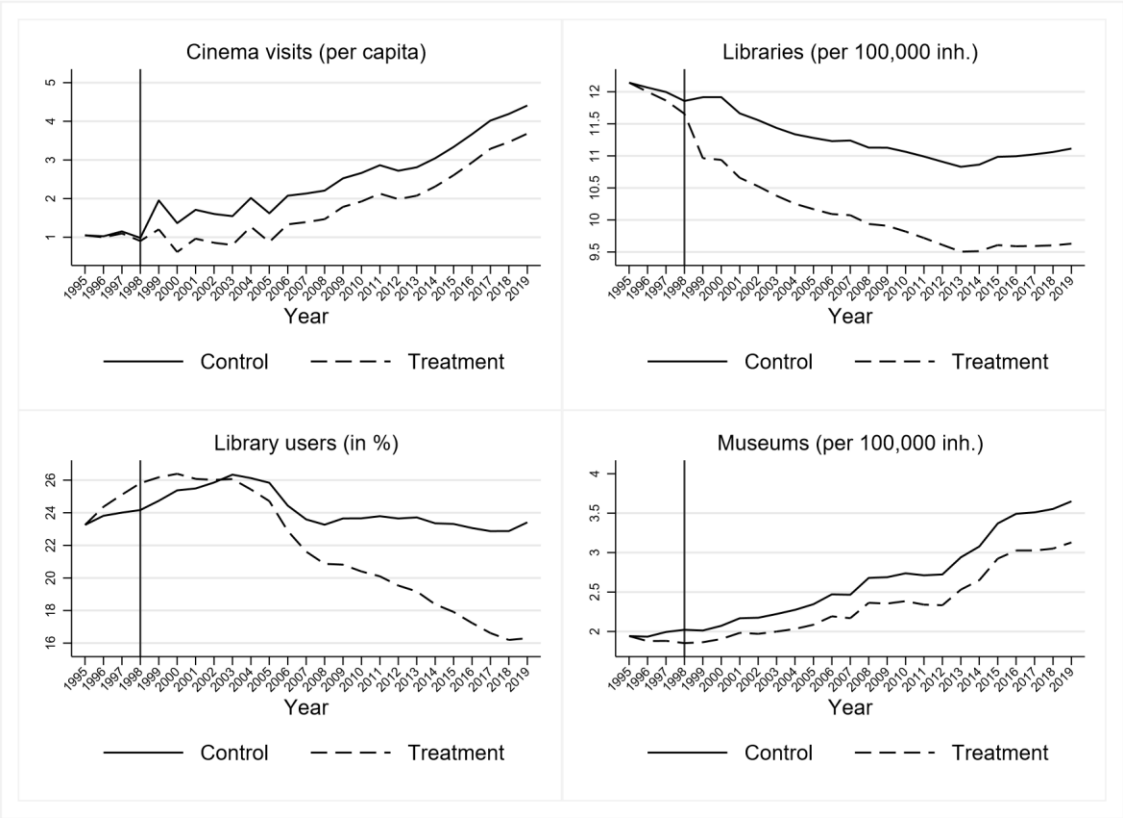
Data source: Statistics Poland.

Figure A4: Linear trends, demographic dimension



Data source: Statistics Poland.

Figure A5: Linear trends, cultural dimension



Data source: Statistics Poland.