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Political economy of special economic zones location in Poland

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Abstract

Aim/purpose – This article’s main objective is to empirically assess the role of political representation in determining the spatial location of special economic zones (SEZs) in Poland in the late 1990s. In particular, we test the main hypothesis, postulating that the location of SEZs was more likely to occur in regions with a stronger political representation of the ruling party.

Design/methodology/approach – To study the role of political representation in determining the location of SEZs in Poland in the 1995-1997 period, we use statistical data for the former 49 Polish regions and estimate the probit model with and without controlling for a number of regional characteristics.

Findings – We found that the political representation variable was an important determinant of the location of the SEZs in Poland. In particular, our estimation results showed that the likelihood of the SEZ location in a specific region was positively affected by a stronger political representation of the ruling party in that region.

Research implications/limitations – The study’s main limitation is its focus on a single country only: Poland.

Originality/value/contribution – This is the first empirical study devoted to the role of political representation in the location of SEZs in general and in Poland in particular.

Keywords: lobbying, Poland, political economy, special economic zones.

JEL Classification: D72, R12.

1. Introduction

In recent years, researchers and policymakers in the European Union have observed an increased interest in industrial policy and the relaunching of regional competitiveness (Arbolino et al., 2024). Currently, a number of EU member states use a variety of policies to stimulate the growth of their economies. In particular, policymakers embraced the establishment of special economic zones (SEZ) to attract foreign direct investment (FDI) and stimulate firm investments and productivity. Within the current EU framework, as stipulated in Article 107 of the Treaty on the Functioning of the European Union, such zones can be perceived as important policy instruments for supporting the development of declining regions and areas facing structural transformations.

Following establishing the first SEZ in Ireland in 1954, and especially after 1990, these zones experienced a significant proliferation. According to UNCTAD (2019), there were more than 5,400 active zones in 147 countries. Over the last 30 years, zones have also spread across the EU. Before the Eastern enlargement in 2000, fourteen old EU member countries had at least one zone established on their territory, while between 2000 and 2020, eight EU countries adopted various forms of this policy (Arbolino et al., 2024). This article focuses on the Polish experience in locating SEZs widely recognized as best practices (Arbolino et al., 2022).

After the collapse of communism, Poland initiated in the late 1980s and early 1990s a series of radical economic and political reforms (Blanchard et al., 1991; Blanchard, 1997; Hare & Turley, 2013). However, the transition from central planning to a market economy affected various Poland regions (Gorzelak, 1993). In some parts of the country, the negative consequences of transition, such as firm bankruptcies, falling output, rising inflation, and unemployment, were more pronounced than in the other. As a result, the Polish society expected active actions of the government to remedy the negative consequences of economic transition (Cieřlik, 2001).

These demands were reflected in the results of the parliamentary elections held in Poland on September 19, 1993, which brought to power the left-wing party Democratic Left Alliance (DLA) – (in Polish: *Sojusz Lewicy Demokratycznej*) – the successor of the former Polish communist party. In order to satisfy these demands, DLA politicians came up with the idea of creating a number of SEZs located in selected regions of Poland. This idea materialized in the October 20, 1994 legal act, which, along with its subsequent amendments, constituted the legal basis for establishing SEZs in Poland.

The act laid out the general principles of creating SEZs but did not specify any formal criteria regarding the spatial location of SEZs. According to this act, special economic zones were to be created to promote the economic development of selected regions of the country. SEZs were established under the regulations issued by the Council of Ministers. The initiative to create SEZs could be taken by the local bodies of state administration and territorial self-government, as well as by the organized groups of interest in various regions of the country to accelerate their economic development. However, it can be argued that, in practice, SEZs were located in regions with the high bargaining power of the ruling political party.

This article's primary goal is to empirically evaluate the significance of political factors that determined the spatial location of SEZs in Poland in the late 1990s. In particular, we test the main hypothesis, postulating that the location of SEZs was more likely in the regions with a stronger political representation of the ruling DLA party. Although the effects of SEZs in Poland received much attention in the prior literature, the evidence on the determinants of their spatial location still remains scarce. In particular, empirical studies on the role of political components in the regional distribution of public aid to entrepreneurs in Poland are virtually non-existent.

Therefore, this article aims to fill at least a part of the existing research gap in this vital field of study. In particular, this article attempts to bridge two significant strands in the economic literature: the political economy literature and the so-called New Economic Geography (NEG) literature. To the best of our knowledge, this is the first article that studies the role of political components in the location of SEZs in general and in Poland.

Our estimation results show that the strong political representation of the ruling DLA party in the region indeed played a significant role in the location of the SEZs. Therefore, it can be argued that the SEZs became a subject of political lobbying rather than becoming an essential component of a responsible long-term regional policy leading to a sustainable development of the entire country. Instead, they were treated as an ad hoc instrument for reaping short-run political gains in regions undergoing industrial restructuring and suffering from high unemployment at the beginning of the process of economic transition. This means that contrary to its original aim, the Program of SEZs in the 1990s might, contribute to widening the economic disparities between particular regions of Poland instead of reducing them (Dorożyński & Świerkocki, 2023).

The structure of this article is organized as follows. In the next section, we provide a review of the relevant literature. Subsequently, we describe the research methodology and statistical data used to verify empirically the signifi-

cance of political and economic factors in the location of SEZs in particular regions of Poland. Finally, we report and discuss our estimation results from the probit regression. The subsequent part of the article provides a summary of the main findings. The final part concludes with policy recommendations, limitations of the study, and directions for future studies.

2. Literature review

The program of creating SEZs and their spatial location within Poland can be investigated through the lens of the international political economy literature. According to Borck (2007, p. 29): “different groups of individuals can use the political machinery to redistribute resources towards themselves or their supporters. These groups may include interest groups and politicians or parties. “There are various models and approaches in this literature that explain policy outcomes. For example, Castles (1982, p.88) argues that “partisan control of government is a major determinant of policy outcomes.” In extreme cases, when political parties compete only once and cannot make binding commitments to their voters, the resulting policies should correspond to the policy of the party in office (Alesina, 1988).

According to Borck (2007, p. 29), “voting models assume that government policies are either directly determined by voters or that policy outcomes of representative democracies are the same that would be implemented by direct voting (...). However, if politicians run the parties with their preferences on policies, then policy outcomes will generally depend on the party in office.” The partisan models of political competition generally assume that left-wing parties represent lower-income voters and right-wing parties high-income voters. Therefore, these models predict less redistribution to people with low income than voter models during the periods when right-wing governments are in power and more when the left is in power.¹

The political economy literature usually focuses on country-level analyses, but a handful of studies also have a regional dimension. In particular, according to these studies, political representation may matter for the spatial distribution of regional aid. For instance, Persson and Tabellini (2000) argued that poor regions

¹ In the political economy literature, a number of other party models that yield different predictions can also be identified. For example, according to Roemer (1998), the extent of redistribution may be limited by party competition. More specifically, if voters differ by income and their beliefs, broadly interpreted as their “religion,” right-wing parties might propose more redistribution to attract poorer voters who share their beliefs. However, summarizing details of these specific political economy models goes beyond the scope of this article.

have a natural set of reasons to be politically powerful, sometimes, even because of their relatively small size. This line of reasoning is subsequently extended by Baldwin et al. (2005, p. 470), who argued that: “small regions would be over-represented in a representative democracy that attributes the same number of MPs (i.e., parliament members) to each region irrespective of the size of their electorates provided that the policy outcome is like an average of the preferences of the MPs.” In contrast, Robert-Nicoud and Sbergami (2004) emphasized rural regions’ political homogeneity. In a nutshell, their line of reasoning asserts that rural populations are more homogenous politically. Given this, politicians find that a given subsidy level buys more votes when subsidies are paid to the rural-based firms, or using the terminology of Persson and Tabellini (2000), there are more swing voters in rural regions.

At the country level, Baldwin and Robert-Nicoud (2007) identified another mechanism by which “losers pick government policy” using a formal lobbying model that allows for entry and sunk costs. In their model, government policy is influenced by pressure groups that incur lobbying expenses to create rent. In expanding industries, entry tends to erode rents; however, sunk costs rule out entry in ailing sectors as long as the rents are not too high. However, their model can be easily extended to a multi-region setting and reinterpreted in the NEG framework. In particular, it can be assumed that regional policies can create local rents, and immigration occurs until these rents are eroded due to congestion costs. If migration costs are at least partly sunk, and there is a negative shock that affects a specific region by lowering the shadow value of immigration to this region below the sunk costs, people stuck in a depressed region can effectively lobby for regional aid without fearing that these rents will be eroded by immigration. Summing up, there is a set of reasons explaining why depressed regions might be politically influential, even if sometimes they are relatively small.

The predictions of political economy models are usually validated empirically using cross-country data. For instance, in one of the earliest empirical studies, Blais (1986, p. 201) found that “public subsidies are higher in small countries, where unemployment is high, agriculture plays a large role in the economy, left-wing parties are in power, and tariffs and social security transfers are low.” The empirical literature generally documents that public subsidies are higher when left-wing parties are in power. For example, in the context of advanced industrial nations, the early studies by Hicks and Swank (1992) and Cusack (1997) provide evidence in favor of higher public spending with left-wing governments.

However, in the specific case of post-communist countries in Central and Eastern Europe (CEE), the situation might be different as “left-wing successors to communist parties often chose to clean up their image by adopting the monetary or fiscal policies traditionally associated with the political right” (Bagashka et al., 2022, p.134). As a result of adopting this kind of policies in the late 1990s, the post-communist left-wing parties in many CEE countries, including Poland, alienated their traditional constituents and eventually lost elections first to parties on the right and later also to the right-wing populist parties that took over significant parts of their former electorates.²

Empirical studies also test the relationship between political participation and political rewards at the state, federal, and local levels. These studies mainly focus on the particular case of the United States. For example, according to Button (1989), public services at the local level improved for African Americans when they entered the electorate more fully after the Voting Rights Act of 1965. Hill and Leighley (1992) showed that at the state level, spending on welfare benefits is positively associated with the level of turnout by people experiencing poverty, and welfare spending is higher in states where the poor vote at higher rates. Martin (2003) found that members of Congress direct federal resources to geographic areas within congressional districts that vote at higher rates. At the federal level, Strömberg (2004) found that counties with a high voter turnout were more successful in attracting New Deal relief spending.

There is also limited empirical evidence for other countries. For example, Horiuchi and Saito (2009) demonstrate that Japanese municipalities with a higher voter turnout receive significantly more regional subsidies. Wiberg (2011), using Swedish county-level data, also found that voter turnout is a significant determinant of the distribution of subsidies. In particular, he demonstrates that when the regional political participation rate increases, the regional distribution of firm subsidies also increases in the counties. Moreover, his results support the prediction of Robert-Nicoud and Sbergami’s (2004) model that politically homogenous regions receive more subsidies.

In the Polish context, empirical studies on the role of political components in determining the extent of public support are still relatively scarce in general, and empirical evidence on the determinants of the regional dimension of public aid is virtually non-existent. The notable exception includes a recent empirical study by Gromadzki et al. (2023), who investigated the effects of a cash transfer program in Poland on support for the populist government. Using the variation

² It has been argued that in these countries, the more easily adaptable younger and educated citizens usually had a right-wing affiliation, while retirees and people with lower education were part of the core constituency of the left (Colton & McFaul, 2003; Bagashka et al., 2022).

at the municipal level in the annual cash transfer amounts per capita and a difference-in-differences estimation method, they find that a cash transfer amount of \$100 per capita translated into an increase in the vote share for the populist party of nearly two percentage points.³

At the same time, there is quite an extensive prior literature on the effects of SEZs in Poland. Several studies evaluated the effectiveness of SEZs in the contexts of regional, social, and macroeconomic policies (Ambroziak & Hartwell, 2017; Cieřlik, 2001; Ciřkiewicz et al., 2017; Dorożyński et al., 2017, 2021; Dorożyński & Świerkocki, 2023; Dugiel et al., 2022; Jarosiński & Mařloch, 2016; Jensen, 2018; Kopczewska, 2019; Łukaniszyn-Domaszewska et al., 2023; Michałek, 2023a, 2003b; Nazarczuk, 2013). Another strand in the SEZ literature focuses on their impact on the development of international trade (Nazarczuk et al., 2020; Nazarczuk & Umiński, 2018a, 2018b, 2019). Finally, there is also a strand in the literature that studies the role of SEZs in attracting foreign direct investment (Cieřlik, 2004; 2005a, 2005b, 2005c, 2005d, 2007, 2013; Cieřlik & Ryan, 2005; Ciřkiewicz et al., 2021; Dorożyński et al., 2018; Dziemianowicz et al., 2019; Nazarczuk & Cicha-Nazarczuk, 2021).

The criteria for SEZ location in Poland were previously studied by Cieřlik (2003), who found that the main factors for SEZ location included the rate of unemployment and employment growth. However, the prior study completely neglected the political component's role in the process of SEZ location. Therefore, this article builds on the prior study and integrates the political dimension of regional aid.

3. Research methodology

3.1. Estimating equation

To test the empirical hypothesis that political factors determined the location of SEZs in Poland, we use a probit regression of the following form:

$$\Pr(SSE_i = 1) = F(\alpha PR_i, X_i\gamma),$$

where: $SSE_i = 1$ if in i -th region SEZ was created during the period 1995-1997 for $i = 1, \dots, 49$, otherwise $SSE_i = 0$; PR_i is the measure of political representation of i -th region, α is the parameter on the measure of political representation that needs to be estimated, X_i is the vector of control variables describing economic and social characteristics of i -th region, and γ is the accompanying vector of the parameters that needs to be estimated.

³ In addition, in a series of recent empirical studies on Poland, Morawski and Brzeziński (2023), Gromadzki et al. (2023), Brzeziński and Sałach-Dróżdź (2024), and Wysocki et al. (2024) investigated various macroeconomic effects of populism at the country level.

3.2. Dependent variable

The first ever established SEZ in Poland was EURO-PARK Mielec created by the regulation of the Council of Ministers on September 5, 1995. This zone was created primarily to restructure the WSK-PZL Mielec and attract foreign investors to it. However, preferential treatment was also given to domestic investors (Bazydło, 2000). The two other zones were created in 1996: Katowicka SEZ on June 18 and Suwalska SEZ on June 25. The program of creating SEZ in Poland gained momentum in 1997 when 14 new zones were created. In the first half of 1997, three zones were set up: Legnicka, Łódzka, and Wałbrzyska on April 15. In fall 1997, 11 additional zones were created: Częstochowska, Kamiennogórska, Kostrzyńsko-Słubicka, Starachowicka, Słupska, Tarnobrzeka, Tczewska, Warmińsko-Mazurska, and Żarnowiecka on September 9, and Krakowska and Mazowiecka on October 14.

Table 1 summarizes the history and location of the SEZs, while Figure 1 shows the spatial location of only currently operating SEZs in Poland.

Table 1. History and location of SEZs in Poland

Zone	Location		Year of	
	Former voivodship	Current voivodship	Creation	Liquidation
1	2	3	4	5
Mielecka	Rzeszowskie	Podkarpackie	1995	Functioning
Katowicka	Katowickie	Śląskie	1996	Functioning
Suwalska	Suwalskie	Podlaskie	1996	Functioning
Legnicka	Legnickie	Dolnośląskie	1997	Functioning
Wałbrzyska	Wałbrzyskie	Dolnośląskie	1997	Functioning
Łódzka	Łódzkie	Łódzkie	1997	Functioning
Kamiennogórska	Jeleniogórskie	Dolnośląskie	1997	Functioning
Kostrzyńsko-słubicka	Gorzowskie	Lubuskie	1997	Functioning
Słupska	Słupskie	Pomorskie	1997	Functioning
Starachowicka	Kieleckie	Świętokrzyskie	1997	Functioning
Tarnobrzeka	Tarnobrzekie	Podkarpackie	1997	Functioning
Tczewska	Gdańskie	Pomorskie	1997	Functioning as Pomorska SEZ since 2001
Warmińsko-mazurska	Olsztyńskie	Warmińsko-mazurskie	1997	Functioning
Żarnowiecka	Gdańskie	Pomorskie	1997	Functioning as Pomorska SEZ since 2001
Krakowska	Krakowskie	Małopolskie	1997	Functioning
Częstochowska	Częstochowskie	Śląskie	1997	2001
Mazowiecka	Warszawskie	Mazowieckie	1997	2001

Source: Author's own elaboration.

Figure 1. A map of Poland with the areas administered by Special Economic Zones

Source: https://www.paih.gov.pl/en/why_poland/investment_incentives/polish_investment_zone

Firms located within the zones that met the conditions regarding the amount of investment outlays and/or new jobs created benefitted from public aid in the form of exemption from income tax (CIT or PIT, depending on the legal form of running a business) and real estate taxes. Initially, firms were entitled to the full income tax exemption for the first ten years and a 50% exemption for the following years until the end of the existence of the zones. However, this investment support system was incompatible with the EU's rules of granting public aid, particularly with its competition policy.⁴ The European Commission clearly

⁴ In addition, a few months before establishing the first SEZ, Poland became a member of the World Trade Organization (WTO). By adopting the provisions of the Agreement establishing the WTO, Poland made the commitment to respect the rules on subsidies and countervailing measures. This agreement was ratified by Poland and entered into force on 1st July 1995 (*Ratyfikacja przez Rzeczpospolitą Polską Porozumienia ustanawiającego Światową Organizację Handlu...*, 1995). In light of the above provisions, SEZs could be treated as areas of subsidies that are not subject to sanctions if they are located in underdeveloped areas. At least one of two criteria had to be fulfilled for the region to be considered an economically underdeveloped area: GDP per capita does not exceed 85% of the national average and/or the unemployment rate in the region must be at least 110% of the national average. The compatibility of Polish SEZ with the WTO/EU criteria was investigated earlier by Cieślík (2003) and is summarized in Table A1 in the Appendix.

stated that the rules for SEZ operations in Poland conflicted with both *acquis communautaire* and the provisions of the Europe Agreement signed by Poland in 1991 that entered into force in 1994.⁵

Therefore, due to progressing accession negotiations with the European Union and the changes in the composition of the government resulting from the parliamentary elections lost by DLA in the autumn of 1997, the program of establishing a new SEZ in Poland officially came to an end. In 1998, the newly elected right-wing government officially abandoned the program of establishing new special economic zones in Poland. Those zones that did not start their operation before 1998, i.e., Czeřtowska and Mazowiecka were liquidated in 2001. However, despite the official commitment not to establish any new zones, the SEZ program was modified and continued by establishing new subzones of existing zones and enlarging the area covered by the already existing zones.

As a result of the obligations associated with Poland's accession to the EU, it was necessary to modify the SEZ regulations to adapt them to the principles Poland committed to follow in the Europe Agreement. This was reflected by the amendment of the Act on SEZs of 16th November 2000. The amended Act on SEZs was coordinated with the Act on the conditions of admissibility and supervision of public assistance for entrepreneurs of 30 June 2000, which set the criteria for the granting of regional aid. In light of this Act, SEZs were incorporated into the broader regional policy of the Polish state.

The next step in adopting Polish law to the requirements of EU law was amending the Act on SEZs of 2 October 2003. This amendment introduced the provisions of the Accession Treaty into the Act. It repealed Art. 5 of the Act of 16 November 2000, stating that investors who obtained a permit to operate before 1 January 2001 could still benefit from a system of unlimited tax exemptions.

The new Act of 10 May 2018 on supporting new investments radically changed the extent of public aid and operation of the SEZs in Poland. Under this Act, the whole country has become a single Polish Investment Zone, and in order to obtain tax exemptions, firms no longer need to invest within designated areas belonging to the SEZs. Moreover, companies investing in less developed regions and areas with high unemployment can benefit from higher public aid to support the development of lagging behind regions. Tax exemptions are valid for a period of 10, 12, or 15 years, depending on the unemployment rate and the maximum permissible level of state aid in the region. The higher the level of

⁵ According to the Europe Agreement, all public aid that distorts or threatens to distort competition by favoring certain undertakings and the production of certain products was regarded as incompatible with the proper functioning of the Agreement. Any conduct that was inconsistent with it was to be assessed based on the provisions regarding the control of subsidies that had been included in the Treaty on the European Union in 1993. This issue is discussed in detail in Cieřlik (2003).

unemployment and public aid, the longer the granted period of support.⁶ At the same time, the currently binding SEZ permits, already granted to investors within the existing SEZs, will remain in force until the end of 2026.

As a result of the administrative reform introduced by the new government in 1998 and the introduction of the new administrative division of the country, which replaced the former 49 provinces with 16 bigger territorial units, SEZs were located in 11 of 16 these new units. The greatest concentration of the SEZ could be observed in Dolnośląskie province, where three zones (and their respective subzones) were located, i.e., Legnicka SEZ, Wałbrzyska SEZ, and Kamiennogórska SEZ, as well as in Pomorskie region where three other zones were located: Słupska SEZ, Tczewska SEZ, and Żarnowiecka SEZ.⁷ Initially, there were no SEZs, only in the five provinces: Kujawsko-Pomorskie, Lubelskie, Opolskie, Wielkopolskie, and Zachodniopomorskie. However, later even on the territory of the provinces, which officially did not have their zones, subzones of existing SEZs based in other regions were established. This means that those provinces that initially did not establish their zones now have subzones of the SEZs created in other regions. In practice, this implies that even if SEZs were officially located elsewhere in practice, they could later operate in every Polish province.

Figure 1 shows that the vast majority (i.e., 10) of the currently existing 14 SEZs and their subzones in Poland were located to the West of the Vistula River, traditionally regarded as the border between relatively well-developed Poland A and underdeveloped Poland B. In light of this evidence, it could be argued that the primary goal of the SEZ in Poland was not to promote the economic development of underdeveloped regions, the majority of which are located in the Eastern parts of the country.

Table 2 shows various measures of the size of currently existing SEZs, including the amount of invested capital and the number of jobs generated both in absolute and relative terms. The SEZs are assigned to three main groups for which: i) none of the WTO/EU criteria were satisfied, ii) at least one criterion was satisfied, and iii) both criteria were satisfied at the time of their establishment.⁸ Table 2 reveals the concentration of economic activity in a small number of SEZs located in the relatively well-developed regions of the country. In contrast, SEZs located in underdeveloped regions attracted relatively less investment and generated much less employment.

⁶ In 2021, the European Commission of the EU introduced the new “Guidelines on Regional State Aid 2022-2027.” The arrangements were adopted by the Regulations of the Council of Ministers on 14 December 2021, and on this basis, the aid map for the period from 1 January 2022 to 31 December 2027 was established.

⁷ In 2001 Tczewska SEZ and Żarnowiecka SEZ were merged into Pomorska SEZ.

⁸ See Table A1 in the Appendix for the analysis of compliance of particular SEZs with WTO/EU criteria.

Table 2. SEZs leading indicators in 2023

Group/Zone	Invested capital (USD billions)	% Share	Jobs created (thousands)	% Share
Group I				
Mieiecka	2.8	5.9	36.5	7.7
Katowicka	10.5	22.0	90.0	19.1
Pomorska	3.7	7.8	17.9	3.8
Krakowska	3.0	6.2	38.9	8.3
Total	20.0	41.9	183.3	38.9
Group II				
Legnicka	2.4	5.0	17.0	3.6
Kostrzyńsko-słubicka	2.4	5.0	36.0	7.6
Łódzka	5.5	11.6	75.0	15.9
Kamiennogórska	0.9	1.9	8.4	1.8
Total	11.2	23.5	136.4	28.9
Group III				
Wałbrzyska	7.9	16.6	65.0	13.8
Starachowicka	0.7	1.5	10.0	2.1
Tarnobrzaska	3.4	7.1	33.2	7.0
Suwalska	1.3	2.7	18.0	3.8
Warmińsko-mazurska	2.4	5.0	20.0	4.3
Słupska	0.8	1.7	5.5	1.2
Total	16.5	34.6	151.7	32.2
Grand Total	47.7	100.0	471.1	100.0

Note: The invested amounts were converted into US dollars using the average annual exchange rate for 2023, obtained from International Financial Statistics, available online at <https://data.imf.org>.

Source: Author's own elaboration based on Polish Investment and Trade Agency data: https://www.paih.gov.pl/en/why_poland/investment_incentives/polish_investment_zone

According to the most recent available data from the Polish Investment and Trade Agency, in 2023, the largest special economic zone both in terms of invested capital and jobs created in Poland was Katowicka SEZ, which did not satisfy any of WTO/EU criteria at the time of its establishment. This zone attracted 22 percent of the total capital invested in the zones and generated over 19 percent of all jobs created in the zones. However, it is not surprising that Katowicka SEZ attracted so much investment, given that it is located in the region that hosts the biggest population agglomeration with a large and well-developed industrial base.

The second largest SEZ regarding the amount of invested capital was Wałbrzyska SEZ, which satisfied both WTO/EU criteria, and the third one was Łódzka SEZ which satisfied only the unemployment rate criterion. The first group of zones that did not satisfy any criteria in 2023 accounted for over 41.5 percent of invested capital and 38.9 percent of jobs created in the zones. The

second group accounted for 23.5 percent of invested capital and 28.9 percent of jobs created. In contrast, the third group accounted for 34.6 percent of invested capital and 32.2 percent of jobs created.

3.3. Explanatory variables

Our primary explanatory variable is the measure of political representation in a specific region. This variable is defined as the number of politicians from the DLA ruling party elected from a specific region in parliamentary elections on September 19, 1993. We hypothesize that DLA politicians wanted to please their existing voters, who mainly were manufacturing workers, rather than attract more votes in underdeveloped agricultural regions in the next election campaign (which was eventually lost).⁹ Hence, we argue that the bargaining power for the central government increases with the number of politicians coming from a specific region, having control over its characteristics.

As the political economy literature suggests, left-wing politicians usually represent lower-income voters. They are generally more supportive of redistributive policies than the right-wing parties. Hence, they would be lobbying to establish an SEZ in the region they represent, so we are testing for the presence of stronger lobbying by the sitting members of the parliament. Therefore, we decided to use the absolute number of politicians who represented particular regions instead of the share of DLA politicians in the total number of representatives from the specific area.

As a result of the 1993 elections, a total of 460 members of Sejm were elected, of which 391 were elected in 52 election districts, and 69 were elected from 15 election lists covering the entire country. However, the number of electoral districts in Poland is larger than the number of regions. Therefore, 52 electoral districts had to be assigned to 49 previous provinces. In particular, this meant that in the case of the Warsaw voivodship, DLA politicians elected in districts Warsaw 1 and Warsaw 2 were added up. Similarly, in the case of Katowice voivodship, DLA politicians elected in districts Sosnowiec 15, Katowice 16, and Gliwice 17 were added up. In addition, 26 DLA politicians elected from the list covering the entire country were assigned to specific regions. The data on the results of parliamentary elections were obtained from *Monitor Polski Dziennik Urzędowy Rzeczypospolitej Polskiej*, 50, October 4, 1993.

⁹ While the DLA managed to maintain most of its electoral base, it still lost the 1997 elections. This failure is sometimes attributed to the adoption of tight fiscal policy measures, such as reducing subsidies to the agricultural sector (Bagashka et al., 2022).

Although the original Act on SEZ of 1994 did not specify any precise criteria for the spatial location of SEZs, it was often argued that social and economic factors were also important in establishing SEZs in addition to the political factors. In many countries, granting state aid to their regions depends mainly on the regional GDP per capita and regional unemployment rates. Sometimes, it could also involve other economic and social factors, such as the population density, the degree of urbanization, or the level of education (Bondonio & Engberg, 2000). According to the Act on the State Aid for Entrepreneurs of 2000, similar factors had to be considered in Poland.

Therefore, in addition to the measure of political representation, we should control for a number of regional characteristics in the probit regression. Potentially, these characteristics could include regional GDP per capita, regional unemployment rate, the rate of regional employment growth, employment rate, population density, urbanization, the number of crimes, the share of industry and agriculture in total employment, the secondary school attainment index and the number of students. These characteristics were already included in the prior study by Cieřlik (2003), but most were not statistically significant. Therefore, in this study, we include only the characteristics that were found to be statistically significant in the prior research, except for regional GDP per capita, which is usually considered to be an essential determinant of regional aid allocation.

Data concerning regional characteristics come from Regional Statistical Yearbooks (*Rocznik Statystyczny Województw*) published annually by the Central Statistical Office in Warsaw. Table 3 reports definitions of particular explanatory variables and their averaged summary statistics.

Table 3. Explanatory variables and their summary statistics (averaged values)

Variable	Measure	Average value	Standard deviation	Minimum value	Maximum value
PR	Number of DLA politicians elected in 1993 elections	3.4	3.4	1	20
GDP per capita	Average for 3 years prior to the establishment of SEZ expressed in PLN constant 1997 prices	8488	2551.4	5814.2	20560.1
Unemployment rate	Average for 3 years prior to the establishment of SEZ expressed in %	17	5.1	5.3	29.3
Employment growth	Average for 3 years prior to the establishment of SEZ expressed in %	-0.7	2.5	-5.0	6.8

Source: Author's own elaboration based on Polish Central Statistical Office data (GUS, 1993-1997).

4. Research findings

The baseline estimates of the probit regression in which the only explanatory variable is the measure of political representation are reported in column (1) of Table 4.

Table 4. Estimation results (z-stats)

Variable	(1)	(2)	(3)
PR	0.083*** (2.59)	0.107*** (2.90)	0.099*** (2.62)
Unemployment		0.052* (1.87)	0.075** (2.42)
GDP per capita		−0.000 (1.41)	−0.000 (1.08)
Employment growth			0.196*** (3.31)
Constant	−1.423*** (7.67)	1.676** (2.33)	−2.233*** (3.31)
Pseudo R2	0.057	0.100	0.199

*** Denotes statistical significance at the 1 percent level.

** Denotes statistical significance at the 5 percent level.

* Denotes statistical significance at the 5 percent level.

Source: Author's own estimations.

The political representation variable displays the expected positive sign and is statistically significant already at the 1 percent level of statistical significance. In the remaining columns of Table 4, we provide the sensitivity tests by controlling for other regional characteristics.

In column (2), we control for the regional unemployment rate and GDP per capita. It turns out that the unemployment rate displays an expected positive sign. However, it is statistically significant only at the 10 percent level, while the estimated parameter on the regional GDP per capita is not statistically significant. These results are generally in line with the findings of the prior study by Cieřlik (2003). Despite controlling for other regional characteristics, the political representation variable remains statistically significant at the 1 percent level.

In column (3), in addition to controlling for the regional unemployment rate and GDP per capita, we also control the regional employment growth. It turns out that the estimated parameter on the employment growth variable displays an unexpected positive sign, and it is significant already at the 1 percent level. This means that the SEZs in Poland were located in the most dynamically growing regions of Poland. This inclusion of this variable affects the statistical significance of the regional unemployment rate, which now becomes significant at the

5 percent level. In contrast, the estimated parameter on the regional GDP per capita remains insignificant at any of the usually accepted levels of statistical significance. The estimated parameter on the political representation variable remains significant at the 1 percent level.

Summing up, it turns out that the political representation variable was an essential determinant of the location of the SEZ in Poland during 1995-1997. Another significant variable at the 1 percent level was the rate of employment growth. The other variables that were typically used in empirical studies for other countries to determine the extent of the regional aid, such as the regional unemployment rate or the regional GDP per capita, were only weakly significant or not significant at all in the case of Poland.

5. Discussion

In this article, we studied the role of political and economic factors in determining the location of SEZs in Poland during 1995-1997. In particular, we focused on the importance of a political component that was overlooked in the prior studies on SEZs in Poland and tested the hypothesis postulating that the location of SEZs was more likely to occur in the regions with a stronger political representation of the ruling left-wing DLA party. We found that the political representation variable was an essential determinant of the location of the SEZ in Poland. In particular, our estimation results show that the likelihood of the location of a SEZ in a specific region was positively affected by a stronger political representation of the ruling DLA party in that region.

Our empirical results also support the view that SEZs were located in regions with a high unemployment rate resulting from the economic transition. However, they also experienced high employment growth prior to their creation. These results are in line with the previous findings reported by Cieřlik (2003), showing that SEZs became an instrument of industrial restructuring in regions badly affected by high unemployment at the beginning of the economic transition rather than becoming a vital component of a regional policy aimed at providing foundations for long-term development of economically underdeveloped regions, following the World Trade Organization and the EU principles.

Therefore, it could be argued that the SEZs became a subject of political lobbying rather than becoming an essential component of a long-term regional policy aimed at stimulating lagging regions' development. Hence, they were treated as a short-run instrument of reaping political gains in regions undergoing industrial restructuring and severely affected by high unemployment at the be-

ginning of the economic transition. This means that contrary to its original aim, the Program of SEZs in the 1990s could have contributed to widening the economic disparities between particular regions of Poland instead of reducing them. However, this issue requires further and more detailed investigation in future studies.

6. Conclusions

6.1. Policy implications

The results of the current study on Polish SEZs have a number of important policy implications not only for Poland but also for other countries. In particular, an increasing number of EU member countries use various state-aid policies to support the growth of their economies through internationalization and (re-)industrialization. This is especially important in light of the ongoing debate in the European Union regarding the potential role of active industrial policy that could support EU firms, boost regional competitiveness, and ease the competitive pressure from emerging economies. Our empirical results for Poland demonstrate that without clearly defined criteria regulating the extent and regional distribution of public aid to entrepreneurs, the declared politicians could easily distort the original goal of SEZ establishment. Rather than thinking about the more equal and balanced economic development of the whole country, they are more interested in pursuing their short-term goals related to their reelection in the regions they represent. Therefore, the extent of public aid always needs to be limited and clear rules regulating it must be established. In particular, to achieve more balanced economic development, firms should not be required to invest only within designated areas belonging to the SEZs, and the extent of public aid should be dependent upon the existing economic conditions in lagging behind regions.

6.2. Limitations and directions for further studies

The study's main limitation is its focus on only one country – Poland. Therefore, it would be useful to extend the analysis of spatial determinants of SEZ location to include other countries and their regions, especially those in the EU. In particular, in future studies, it would be instructive to compare the determinants of the spatial location of SEZ in Poland with those in other EU member countries and

determine the importance of the political component. This would allow investigation of whether the spatial location of SEZs is generally affected by political lobbying and formulation of specific policy recommendations concerning the spatial extent of public aid to entrepreneurs.

Disclosure statement

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Appendix

Table A1 shows the compatibility of the spatial location of the Polish SEZ with two fundamental criteria of the WTO and the EU that were binding at the time of their creation. They were based on GDP per capita and the unemployment rate to the national average of the last three years before establishing the zone in a specific region. Column (1) of Table A1 shows the names of the former provinces in which SEZs were located. These provinces roughly corresponded to the NUTS III level of spatial aggregation. Columns (2) and (3) show the GDPs per capita and unemployment rates, respectively, in those provinces to the national average calculated for the last three years before the year in which it was decided to create a zone in the region. Finally, columns (4) and (5) assess whether the relevant criteria based on GDP per capita and the unemployment rate in the region were met.

Table A1. Evaluation of SEZ location against EU and WTO criteria for state aid

Former voivodship	GDP per capita in relation to national average 3 years before the establishment of SEZ	Unemployment rate in relation to national average 3 years before the establishment of SEZ	GDP per capita below 85 % of the national average	Unemployment rate above 110 % of the national average
(1)	(2)	(3)	(4)	(5)
Rzeszowskie	87.0	109.4	No	No
Katowickie	113.8	62.6	No	No
Suwałskie	68.7	182.0	Yes	Yes
Legnickie	115.4	126.4	No	Yes
Wałbrzyskie	73.4	167.4	Yes	Yes
Łódzkie	105.1	122.0	No	Yes
Jeleniogórskie	86.9	130.2	No	Yes
Gorzowskie	86.7	133.9	No	Yes
Śląskie	72.3	190.5	Yes	Yes
Kieleckie	73.6	114.2	Yes	Yes
Tarnobrzesskie	76.3	99.9	Yes	No
Gdańskie	106.7	86.5	No	No
Olsztyńskie	79.8	174.4	Yes	Yes
Krakowskie	110.2	50.8	No	No
Częstochowskie	82.5	89.9	Yes	No
Warszawskie	186.3	36.0	No	No

Source: Author's own elaboration based on Polish Central Statistical Office data obtained from (GUS, 1993-1997).

Table A1 shows that not all of the SEZs created in Poland met the WTO/EU criteria. None of the above criteria were met by the zones located in five former provinces: Rzeszowskie, Katowickie, Gdańskie, Krakowskie, and Warszawskie. In particular, this applied to still-existing zones: Euro-Park Mielec, Katowicka SEZ, Pomorska SEZ, Krakowska SEZ, and the defunct Mazowiecka SEZ. At least one of the WTO and the EU criteria was met by zones localized in eleven former provinces, with the per capita GDP criterion met in the case of only seven provinces and the unemployment rate criterion met in the case of nine provinces. Both criteria were met only by zones created in five former provinces: Kieleckie, Olsztyńskie, Śląskie, Suwałskie, and Wałbrzyskie.

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