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THE ILLUSIONS OF SPECIAL ECONOMIC ZONES IN DEVELOPED COUNTRIES

ILUZJE SKUTECZNOŚCI SPECJALNYCH STREF EKONOMICZNYCH W KRAJACH ROZWINIĘTYCH

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Summary: One thing missing from most studies on the effects of targeted benefits of Special Economic Zones (SEZs) is a consideration of the indirect and unintended economic effects of these policies. The contribution of this paper is a clarification of this point providing a better identification of opportunity costs of the targeted benefits in SEZs. The author challenges the four most important and interdependent assumptions about the effectiveness of: fiscal incentives, localization, job creation and the negligible distortion of competition. Based on the literature review and data from the Polish SEZs, the author concludes that job creation in the domestic economy due to establishing SEZs is much smaller if the estimates include the negative effects of lower public spending on labour policy caused by fiscal incentives in SEZs, as well as additional unemployment created by distorted competition and the misallocation of resources. Confidence in the evaluation results of SEZs could be increased by efforts to improve the match between the treatment and control data, including the geography and timing of the zone interventions.

Keywords: Special Economic Zone, tax incentives, place-based policies, externalities.

Streszczenie: W większości badań na temat skuteczności wsparcia świadczonego w specjalnych strefach ekonomicznych (SSE) brakuje dyskusji na temat pośrednich i niezamierzonych skutków ekonomicznych takiej polityki. Artykuł ten stanowi wkład w dyskusji, oferując lepszą identyfikację kosztów alternatywnych generowanych przez SSE. Autor kwestionuje cztery najważniejsze i współzależne założenia dotyczące efektywności: zachęt fiskalnych, lokalizacji, generowania miejsc pracy oraz założenia o braku istotnego wpływu na konkurencję. Na podstawie analizy literatury oraz danych z polskich SSE autor argumentuje, iż liczba realnie utworzonych miejsc pracy w gospodarce krajowej dzięki

utworzeniu SSE jest znacznie niższa, jeśli uwzględni się negatywne efekty niższych wydatków publicznych w ramach polityki zatrudnienia spowodowanych: mniejszymi wpływami podatkowymi będącymi rezultatem zachęt podatkowych w ramach SSE, dodatkowym bezrobociem wywołanym przez zakłócenia konkurencji oraz błędną alokacją zasobów. Dokładność wyników modeli efektywności SSE może być zwiększona, jeśli poprawiony zostanie dobór danych kontrolnych i danych badawczych, tak aby właściwie uwzględniały czynniki geograficzne oraz relacje czasowe związane z działalnością SSE.

Słowa kluczowe: specjalne strefy ekonomiczne, koszty alternatywne, zachęty podatkowe.

1. Introduction

The conventional approach to measure the effectiveness of Special Economic Zones (SEZs) is focused on measuring the effects that show up in local aggregate measures, such as changes in employment and economic growth. Such studies thus tend to ignore the longer-run – and often unseen – negative effects on both resource allocation and the distortion of competition on the country-wide scale. The purpose of this paper is to provide a better understanding of some opportunity costs of the targeted benefits. The research was narrowed down to the enterprise zones (EZs) from the following types of SEZs (FIAS, 2008):

- Free trade zones (FTZs; also known as commercial free zones) are fenced-in, duty-free areas, offering warehousing, storage, and distribution facilities for trade, transshipment, and re-export operations.
- Export processing zones are industrial estates aimed primarily at foreign markets. Hybrid EPZs are typically sub-divided into a general zone open to all industries and a separate EPZ area reserved for export-oriented, EPZ-registered enterprises.
- Enterprise zones are intended to revitalize distressed urban or rural areas through the provision of tax incentives and financial grants.
- Freeports typically encompass much larger areas. They accommodate all types of activities, including tourism and retail sales, permit on-site residence, and provide a broader set of incentives and benefits.
- Single factory EPZ schemes provide incentives to individual enterprises regardless of location; factories do not have to locate within a designated zone to receive incentives and privileges.
- Specialized zones include science/technology parks, petrochemical zones, logistics parks, airport-based zones, etc.

This paper applies to one type of zones but the conclusions could be partly generalized also on the other types of SEZs.

The main methodological mistake present in many papers is the assumption that without the SEZs there will be no new investment in the given area. Considering that the main feature of a SEZ is its geographical nature as well as the existence of tax incentives this assumption can be false. For instance, establishing a SEZ is

accompanied by heavy public investment in infrastructure, but what if this investment will not be sufficient to attract new businesses?

Even if researchers try to control for relocations (Chaudhary and Potter, 2018), the data may be not reliable if one tries to consider migrations from distant parts of a country which decrease unemployment in the SEZ area and in closely neighbouring areas but can increase it in other parts of the country.

In this paper the author challenges what in his opinion are the four most important and interdependent assumptions:

1. Fiscal incentives – without tax preferences there would be no or much less investment in the given area.
2. Localization – without economic zones there would be no or much less investment in the given area.
3. Unemployment – without economic zones there would be higher unemployment.
4. Distortion of competition – the positive effects of economic zones prevail over a distortion of competition.

The main findings are as follows:

First, the incorrect baseline scenario assuming that all measured variables are not subject to change is very common in literature. Second, there is no separate analysis of the effects of tax incentives and public investment in infrastructure. Third, the effectiveness of SEZs is not compared to other policies aimed at fighting unemployment. Fourth, the distortion of competition is assumed to be negligible without any proof.

All these deficiencies are mainly the result of the very narrow analysis of SEZs limited usually to their area and close neighbours and apply to all types of methods used, qualitative as well as quantitative.

The paper makes three main contributions to the literature on this topic.

First, although SEZs have been studied for a long time still the lack of comparable cross-country data on the performance of SEZs has been a fundamental barrier to this type of research (Group, World Bank, 2017). The author seeks to fill this gap by proposing a set of verified assumptions and recommendations for future studies:

- firms would invest in the country even without fiscal incentives. Other factors like size of the market, infrastructure, cost and quality of labour force are much more important,
- SEZs are located in regions with already the highest growth potential,
- the effectiveness of SEZs (or regions with existing SEZs) cannot be measured in relation to the country's averages or to neighbouring regions, but rather to historical trends or to other SEZs,
- opportunity costs of other labour market policies as well as the effects of distortion to competition should also be measured or at least estimated.

Second, the author defines the areas requiring most urgent research. They are the measure of the effects of distortion to competition and the more frequent use of counterfactual analysis covering interactions of SEZ-based firms with the domestic economy.

Third, this paper extends the research of Chaudhary and Potter (2018), where seminal enterprise zone evaluations in the UK, USA and France were conducted. After a review of literature on Polish SEZs, the author confirms that typically narrow-focused research designs and a theoretical evaluation have contributed to the lack of consensus and policy insight, potentially exacerbated by non-exact data. The author also argues that the presented theoretical framework should be extended to include more indirect effects of distortion to competition.

The paper is organized as follows. Sections 2 to 5 challenge the assumptions of fiscal incentives, localization, unemployment and distortion of competition respectively, and in the final section, the main results are summarized and discussed from a policy perspective.

2. Fiscal incentives

The role of fiscal incentives is still raised by policymakers (and some researchers) despite being underlined as ineffective in many research papers. For instance, Zee et al. (2002) state that fiscal incentives create important tax revenue losses for governments. These losses may be acceptable only if the investments are additional and generate positive externalities. Additionally, tax breaks and holidays can create resource allocation problems. In other words, fiscal incentives targeting companies located in the zones draw resources into zone-based companies at the expense of those located outside those zones (Zee, Stotsky, and Ley, 2002). In addition, some activities can be promoted over others not because they are more productive but because they are located in SEZs (Zee, Stotsky, and Ley, 2002).

The research also suggests that the provision of corporate tax breaks has been of marginal importance, as have most nonfiscal benefits, such as the availability of national one-stop-shops and the independence of zone regulators (Group, World Bank, 2017). However Klemm and Van Parys (2012) show that lower CIT rates and longer tax holidays are effective in attracting FDI in Latin America and the Caribbean but not in Africa. None of the tax incentives are effective in boosting gross private fixed capital formation.

The empirical estimates of Mutti and Grubert (2004) indicate that the relation between tax incentives and investment can be quite complex. Investment geared towards export markets rather than the domestic market, is particularly sensitive to host country taxation, and this sensitivity appears to be greater in developing countries than in developed countries, and that it is becoming greater over time.

The ineffectiveness of fiscal incentives for attracting FDI in Poland has been documented by many researchers. In the survey by Witkowska (1999), the top five reasons for investing in Poland were (from the most to the least important): labour cost, economic development, market size, gaining or increasing market share and access to a highly qualified workforce. The later research by Karaszewski (2001) showed that the most important factors for foreign investors in Poland were: establishing new markets, reliability of the existing market, and the lower competitiveness of local firms.

For more than half of the respondents of the Polish Investment and Trade Agency (PAIIZ, 2005) survey, the most important incentive for investing in Poland was market size, then labour costs and economic growth expectations. The results of research by Stawicka (2007) were similar. Pivotal factors for investing in Poland were respectively: market size, economic growth expectations, market absorptivity, labour cost and favorable geographical location.

The latest report by JLL (2016) corroborates with the above-mentioned research results that the main advantages of Poland as an investment destination is political stability, the big domestic market and the highly qualified workforce.

The conclusion from all the research is that the majority of foreign investors in Poland, which constitutes 81% of investment in SEZs, would invest in Poland even without any fiscal stimulus.

3. Localization

The second (first?) constitutive element of a SEZ is its geographical delimitation. Surprisingly little is known so far about the externalities created by these place-based policies. SEZs are often blamed in public debate for ‘cannibalizing’ neighbouring communities by causing a shift of economic activity within a city, from areas that do not benefit from the program to areas that do. Givord et al. (2013) rightly note that it is obviously an important concern for public policy to know whether a revitalizing program spurs the development of one area at the expense of another. Neumark and Simpson (2015) show that the local welfare effects might differ substantially from those at an aggregate level. Exploiting agglomeration externalities in one location might come at the expense of (possibly greater) losses of agglomeration benefits in other areas and distortions to the efficient location of economic activity.

Group, World Bank (2017) reported that the performance of SEZs in emerging economies has been affected first and foremost by the zones’ country and region-specific contexts. Costs, industry structure, and proximity to large markets influence SEZs dynamism.

Farole (2011a) finds that access to a large local and regional market is also correlated with higher levels of investment, exports, and employment in SEZs.

Within a SEZ, transport and trade facilitation and infrastructure quality are the factors that appear to have a strong effect on performance.

The earlier research of Papke (1993) on UK enterprise zones found that between 50% and 80% of enterprise zone businesses had relocated into the zones, prompting the British government to phase out the program.

Similar results can be found in the case of France, Italy and the USA. Givord et al. (2013) find the tax exemptions provided by the French ZFU program had a positive impact on the number of businesses located in the treated areas. Such an impact is mainly driven by the increase in the number of new companies, both through births and relocations. In relative terms, the increase is mainly due to a surge in the number of businesses relocating. The same conclusions come from the study evaluating the effectiveness of a major Italian place-based policy (*Contratti di Programma*) (Andini and de Blasio, 2016). For California and Florida (Elvery, 2009), Colorado (Lynch and Zax, 2011) and New Jersey (Boarnet and Bogart, 1996), the authors find no significant effects on job creation. According to them this is due to the spatial substitution effect, that is EZs just attract businesses from neighbouring areas without creating new ones¹.

The results from Poland follow the same path. More than one-third of the surveyed companies which invested in Polish EZs (Siudak, 2013), responded that they would invest in the same place or nearby, regardless of the establishment of an EZ, and 45.2% did not even consider another location. The research by Hajduga (2011) on Lower Silesian EZs shows that 66% of the surveyed firms relocated to the zones and 30% of them were earlier located in the same municipality, 27% moved within the same region (voivodeship) and 30% relocated from other regions. This means that all these companies would probably invest in Poland and more than 34% would invest in the same area even without EZs. For 24% of the surveyed firms, tax breaks had a low priority. For 41% of investors, the low cost of land was the most important factor and for a similar number of the surveyed firms a good localization for transport was pivotal. This result suggests that EZs were established in the areas already very attractive for potential investors.

The study findings from the ex-post evaluation of regional aid guidelines for 2007-13 (Le Den et al., 2013) where 28 investment projects in seven European countries were analyzed (Ireland, Germany, Slovakia, Hungary, Poland, Spain and Portugal) also suggest that in all projects investment would have been carried out even in the absence of state aid.

This problem is not addressed by the increasingly widespread use of nightlights data in economics aimed to overcome the lack of reliable information on the performance of individual SEZs (Group, World Bank, 2017).

¹ On the other hand, various US state enterprise zone policy evaluations found no displacement from other local areas (see Chaudhary and Potter, 2018 for the literature review).

4. Unemployment

Job creation (direct and indirect) is expected to be the most widely used performance indicator of economic zones, but (Group, World Bank, 2017) finds that in addition to the lack of a census on SEZs, data are missing for such key performance indicators as well as for revenue growth, export performance, and spillovers.

The results of synthesizing 59 studies conducted by Cirera and Lakshman (2017) suggest there is no robust evidence that the employment created in the zones is additional.

The empirical estimates indicate that there is a positive impact of SEZs in Poland on the labour market but this evidence is much weaker if controlled for average capital/labour ratio and manufacturing production per capita before the establishment of EZs (Ciżkowicz, Rzońca, Ciżkowicz-Pękała, and Pękała, 2014). These results are confirmed by Lizińska and Marks-Bielska (2013) who find a substantial imbalance in job creation in favour of EZs located in already better developed regions. Indeed, recent comparative research for the World Bank (Farole, 2011a) shows that on a global basis, infrastructure reliability has a significant impact on EZs' success, while other incentives have had no measurable effect.

Additionally one cannot forget that EZs are not the only tool for dealing with high unemployment. Taking into account the value of tax break per person employed one can doubt if it is the most efficient tool.

Table 1. Value of tax break per person employed in Polish EZs

Year	No. of jobs created in EZ	Total value of tax break (annual) thousands PLN	Total value of tax break per new job created (monthly) PLN	Minimum wage gross PLN	Minimum wage net PLN
2014	213 939	2 551 536	993,87	1680	1237
2015	225 222	2 561 422	946,74	1750	1286
2016	225 532	2 728 838	1008,3	1850	1560

Source: own work based on (*Information about the implementation...*, 2017; *Information about the implementation...*, 2018).

The Polish data (Table 1) show that the fiscal cost of EZs measured as the total value of tax break per new job created was not much lower than the net minimum wage. Considering the fact that many (if not most) foreign investors were also granted direct financial aid, it could be argued that the Polish government provided an almost free labour force for companies which would have invested in the country anyway. In such a case it would be possible to directly create almost two times more jobs in the absence of EZs as a result of new private investment and public labour policy. Using more granular data Lichota (2016) estimates that the employment

of the unemployed in EZs up to the end of 2012 had generated 4.2 billion PLN savings from unpaid unemployment benefits and 407 million PLN from unpaid social security allowances for the unemployed. However, the same author estimated that total state aid granted to companies in all EZs in the same period amounted to 12.3 billion PLN. That means, assuming that most of these firm would have invested there anyway, the government would have allocated almost 7.7 billion PLN more for labour policy spending. These results go along with the conclusions of Chaudhary and Potter (2018) that the UK and the US EZs' cost per job created was between 8 000 and 20 000 USD per annum in 2016 prices.

Similar calculations for the Russian Alabuga SEZ (Tatarstan, Russia) indicates that the cost of one new job in the form of lost tax revenues was almost four times higher than the minimum wage (own calculations based on Sinenko and Mayburov, 2017).

5. Distortion of competition

The theoretical literature on the possible externalities of FDI is not conclusive (see e.g. Findlay, 1978; Blomstrom and Wang, 1992; Rodriguez-Clare, 1996; Markusen and Venables, 1997; Glass and Saggi, 1998; Lin and Saggi, 2005; Liu, 2008). It suggests that foreign companies use more advanced technology or possess superior expertise than the local firms and hence can spur employment and investment in that region. However, in certain cases, some less competitive local companies might be driven out of their markets or never formed.

Nevertheless the World Bank (Farole, 2011b; FIAS, 2008) recommends SEZs open for foreign and local firms, liberalized, with sales to domestic market provided on a blanket basis. It is assumed that the positive spill-overs from more advanced (foreign) companies to local firms would exceed the costs of the tax advantage of firms localized in SEZs over their domestic rivals.

This advice was not followed by China. The residents of SEZs in this country define the price on the goods and should take into account the recommendations from the local bodies controlling the prices. The goods' prices must correspond to the prices on the same goods of other companies of China (Kuzmenko, Pelkova, Lukianenko, and Fomichev, 2018).

This also collides with the European Union Treaties. Article 107 of the Treaty on the Functioning of the European Union states that: "[...] any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market. [...] 3. The following may be considered to be compatible with the internal market:

(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment, and of the regions referred to in Article 349, in view of their structural, economic and social situation."

In order to prevent distortion to competition the European Commission estimates maximum levels of state aid.

Basically, the core rationale of EZs is to compensate for the costs of investing in less developed regions. As seen above, the incentive effect of the tax breaks is generally low, and investors usually make their investment and location decisions based on hard location factors in view of maximizing their investment returns, regardless of the aid. Hence, when aid has no or limited incentive effect for the investment or location decision, it is basically additional revenue for the beneficiaries which is potentially distortive if it does not compensate for any additional costs.

It is very hard if not impossible to precisely measure the negative impact of firms located in EZs on competitors. To address this problem, the structure of investors in the four biggest EZs in Poland is compared with the structure of enterprises in the whole Polish economy by the type of activity (Table 2).

The design of fiscal incentives in Polish EZs puts preference on high job creation and/or high value investment. Additionally the industries included in Table 2 are in their majority, capital-intensive. Therefore the number of medium-sized firms in the zones is very limited. This allows to compare the number of enterprises located in EZs with all large companies (employing more than 250 workers) in Poland. Consequently, three groups of industries can be distinguished²:

1. More than 70% of firms located in EZs – low risk of distortion to competition.
2. Between 30% and 69% of firms located in EZs – high risk of distortion to competition.
3. Below 30% of firms located in EZs – low risk of distortion to competition.

The low risk in the first group stems from the fact that all the competitors are already located in EZs. The potentially low risk in the last group is justified by the small fraction of industry located in EZs, but it cannot be excluded that this handful of companies may have a leading position in their respective markets, or thanks to the tax advantage they will gain a dominant position in the near future. Nevertheless the firms from the second group will most likely distort competition. The probability that there exist direct domestic competitors outside the EZs is the highest.

There are also indirect negative spill-overs. For instance, investors in EZs located in cities with very low unemployment thanks to tax breaks are able to offer higher wages than neighbouring firms, small and medium ones in particular. In this way EZs limit potential growth of all other firms in their vicinity. A situation where fiscal incentives targeting companies located in the zones draw resources into zone-based companies at the expense of those located outside those zones is also reported by Zee et al. (2002). In addition, some activities can be promoted over others not because they are more productive but because they are located in SEZs (Zee, Stotsky, and Ley, 2002).

² For the purpose of this paper cut-off levels for classification are arbitrary but sufficient to draw valid conclusions.

Table 2. Number of firms in the biggest Polish EZs and Polish economy by type of activity

No.	Industries	Economic zone				Total EZs	Total number of firms employing more than			
		walbrzyska	katowicka	tarnobrzaska	pomorska		250 empl.	250 empl. %	50 empl.	50 empl. %
1	Machinery and equipment	7	25	5	49	86	72	119	464	19
2	Printing	1	5	6	2	14	12	117	168	8
3	Motor vehicles	39	58	6	2	105	101	104	288	36
4	Metal products	36	38	28	18	120	152	79	1094	11
5	AGD/RTV	9	7	2	1	19	25	76	44	43
6	Electronics	5	5	7	10	27	43	63	159	17
7	Plastic products	22	23	11	8	64	103	62	632	10
8	Paper products	5	6	1	6	18	32	56	209	9
9	Chemical products	9	11	7	5	32	60	53	242	13
10	Pharmaceuticals	0	0	6	4	10	24	42	67	15
11	Construction	8	22	17	14	61	176	35	2048	3
12	IT and other information services	4	8	0	1	13	48	27	259	5
13	Electrical equipment	2	8	0	3	13	77	17	284	5
14	Textiles	2	2	1	0	5	32	16	236	2
15	Food products	9	9	7	10	35	228	15	1352	3
16	Glass products	0	6	4	2	12	90	13	351	3
17	Lighting and furniture	3	0	5	5	13	98	13	446	3
18	Transportation and storage	4	17	2	2	25	200	13	952	3
19	Wood products	0	4	0	1	5	54	9	412	1
20	Property development	0	12	0	0	12	–		–	

Source: own calculations.

6. Conclusion

The aggregate evaluation evidence is currently divided on whether or not enterprise zone policy is an effective and efficient tool for local employment development. Unfortunately there is very scarce research on the indirect effects on the domestic

labour market. This is quite surprising considering the strong evidence of ineffectiveness of fiscal incentives for attracting foreign direct investment in Poland. In many analyses it is assumed that new investment in economic zones means new net investment. This paper proves that such an assumption is wrong and must be abandoned. Similarly, most of the models do not consider the effects of distortion of competition due to the fiscal incentives in the zones. These externalities, although hard to estimate and include in the models could completely change overall picture of effectiveness of the special economic zones.

Building the required evidence implies developing more theoretically driven studies based on more sound assumptions that seek to identify the range of factors and channels that decide about the degree of enterprise zone policy success in employment development, not only at local but also at national scale.

At the same time, confidence in the evaluation results could be increased by efforts to improve the match between the treatment and control data including the geography and timing of the zone interventions. A boosted enterprise zone evaluation agenda of this kind would help governments make more informed decisions about enterprise zone policy and other place-based tax incentive driven interventions for local employment development.

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