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**POLICY BRIEF //**

# European Special Economic Zones

Research spin-off project of “The World in Europe: Global FDI flows towards Europe (ESPON FDI)”

Policy Brief // November 2020



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#### **Authors**

Copenhagen Economics: Sigurd Næss-Schmidt, Erik Dahlberg, Morten May Hansen, Hendrik Ehmann

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## Abbreviations

ARCA	Additive index of revealed comparative advantage
EFTA	European Free Trade Association
EGTC	European Grouping on Territorial Cooperation
ESPON	European Territorial Observatory Network
EU	European Union
Ha	Hectares
FDI	Foreign direct investment
FEZ	Free economic zone
FTZ	Free trade zone
GDP	Gross domestic product
GVFA	Gross value of fixed asset
IIFZ	Integrated industrial free zone
NRCA	Normalised index of revealed competitive advantage
NUTS	Nomenclature of territorial units for statistics
PAIH	Polish Investment & Trade Agency
PZM	Private zone management
R&D	Research and development
RCA	Revealed comparative advantage
SDM	Spatial Durbin model
SEZ	Special economic zone
TDI	Territory development index
VAT	Value added tax
ZEC	Canary Islands Special Zone



# Introduction

During 2020, the Hungarian government has been revising their free economic zones (FEZs). A FEZ is a subcategory of the broader term Special Economic Zone (SEZ), i.e. designated areas within a country where companies have preferential terms within the framework of national and EU state aid rules. These preferential terms include for example tax exemptions of e.g. corporate or personal income taxes.<sup>1</sup> The government is looking into different aspects of their FEZs, including the incentives given to firms investing in the FEZ, the territorial coverage of the FEZs, the role of the government, the objectives (*raison d'être*) of the FEZs, etc.

As part of this revision, the Hungarian government and ESPON EGTC has asked Copenhagen Economics to analyse four case study SEZs in Europe for comparison and inspiration to the revision of the Hungarian FEZs.

Based on a list of European SEZs with publicly available information on the incentives, objectives, territorial coverage, etc., four case studies have been selected for further analysis. The case studies were agreed among the Hungarian government, ESPON EGTC and Copenhagen Economics, and are analysed in this policy brief. We go through the four case studies one by one in four chapters:

1. The Latvian Special Economic Zones
2. The Lithuanian Free Economic Zones
3. The Polish Special Economic Zones
4. Other cases of SEZ impact assessments in other countries

The first three case studies are country-specific, whereas the last covers impact studies in other European countries.

In this policy brief, we describe the selected SEZs and we analyse available literature dedicated to ex-ante or ex-post impact analyses and methodologies applied in the four SEZ case studies. Most studies analysed do not consider counterfactual analyses. However, two studies of the included studies make a counterfactual analysis when examining the Polish SEZs using difference-in-difference methodologies.<sup>2</sup> Where relevant and possible, the case studies are supported by information from the parent study *Global FDI flows towards Europe*<sup>3</sup> and data from Eurostat and national statistics. Furthermore, we gathered information from the SEZ administrations to ensure that we have as much available information from analyses, news article, etc. as possible.<sup>4</sup> We examine how the different SEZs and their impact studies have similarities and differences to the Hungarian FEZs, see Table 0.1 for an initial comparison.

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<sup>1</sup> Investors need to qualify for state aid and obtain a permit to operate in a SEZ. See (KPMG, 2014)

<sup>2</sup> Ambroziak & Hartwell (2018) and Jensen & Winiarczyk (2014) both sets up counterfactual scenarios using difference-in-difference estimators. For a general description of the quasi-experimental design of difference-in-difference estimators and counterfactuals, see for example <https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation>

<sup>3</sup> ESPON (2017)

<sup>4</sup> Not all SEZ administrations have responded to our questions. We have included the relevant information from those who have provided information.

**Table 0.1**  
**SEZs comparative elements**

Topic	Hungary	Latvia	Lithuania	Poland
Objectives (Raison d'être)	Serves deprived areas with high unemployment	To attract investments, develop infrastructure and production, create new jobs, and promote export growth and industrial activities	To encourage the growth of industry and to create jobs in least-developed regions of the country by promoting investments	To speed up the economic development of the poorest Polish regions by attracting foreign capital and fight structural unemployment
Territorial coverage	1,202 FEZ municipalities with relatively high unemployment	Five designated SEZs between 1,155 and 4,000 hectares of land*	Seven designated FEZs between 47 and 534 hectares of land	14 regional SEZs covering the whole country with sub-SEZs within them
Main incentives	<ul style="list-style-type: none"> <li>• Tax reductions</li> <li>• Reduced contributions to vocational and social contributions for firms operating in FEZ</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate income tax reduction</li> <li>• Property tax reduction</li> <li>• Tax rebates for labour for some SEZs</li> </ul>	<ul style="list-style-type: none"> <li>• 0% corporate income tax</li> <li>• 0% property tax reduction</li> <li>• 0% dividend tax</li> </ul>	Tax exemption from <ul style="list-style-type: none"> <li>• Corporate tax</li> <li>• Personal income tax,</li> <li>• Real estate tax</li> </ul>
The role of the state	Financing the incentives. Municipalities run the SEZs	Financing the incentives. Publicly owned SEZ companies.	Financing the incentives. <i>Privately</i> owned FEZ companies.	Financing the incentives. Publicly owned SEZ companies.
Governance structure	Publicly owned and operated	Publicly owned and operated	Blended structure where the government finance the incentives and a private company operates the SEZ.	Publicly owned and operated

Note This is a simplified comparison as the different incentives and coverages are more complex than illustrated in this table, see the case studies. \* with an exception of the Latgale SEZ that is a special type of SEZ, see case study.

Source: Copenhagen Economics based on multiple sources, see case studies

In the end, we provide suggestions for the Hungarian government's FEZ scheme revision.

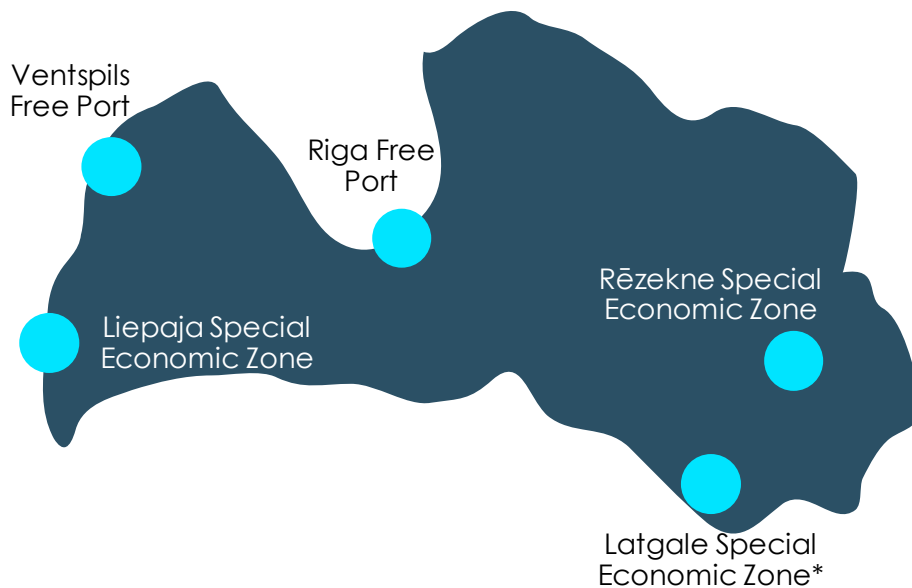
In addition to this policy brief, there is a technical appendix outlining the research to create the list of SEZs, as well an assessment of the different methodologies of economic impact in the SEZ case studies found in the literature. The list of SEZs in Europe is also part of the deliverable in a separate Excel-file.

# 1 The Latvian Special Economic Zones

There are five special economic zones in Latvia. Two of the SEZs, Riga Free Port and Ventspils Free Port, are also categorised as free ports with has the benefits of no customs duties for re-export under the European inward processing scheme,<sup>5</sup> but still have tax incentives similar to the other SEZs.

The SEZs are located in different regions of Latvia. Liepāja, Riga, and Ventspils are located on the coast of the Baltic Sea in the Western and Central part of Latvia, whereas the Rēzekne SEZ and the Latgale SEZ are located in the poorer landlocked Latgale region in Eastern Latvia, see Map 1.1. Four of the zones, Liepāja, Ventspils, Riga and Rēzekne, are dedicated SEZ territories between 1,155 and 4,000 hectares of land. The Latgale SEZ is different from the other SEZs in Latvia, as it covers 21 municipalities which each can designate a territory as part of the SEZ. The maximum area covered cannot be more than 5% of the available land in the region, equivalent to up to almost 73,000 hectares.<sup>6</sup> The Riga, Ventspils, Liepāja and Rēzekne SEZs were founded between 1996 and 1997, and the Latgale SEZ was founded in 2017. All SEZs are planned to be phased out by 2035.

**Map 1.1**  
**Map of Latvian SEZs**



Note: \*The Latgale SEZ covers 21 municipalities in the Eastern region on Latvia (LV005), which also covers the city of Rēzekne. The dot shown is the administrative centre of the Latgale SEZ.

Source: Investment and development agency of Latvia

<sup>5</sup> See [https://ec.europa.eu/taxation\\_customs/inward-processing\\_en#:~:text=Inward%20processing%20means%20that%20non,purposes%20of%20manufacturing%20or%20repair.&text=Import%20duty,Commercial%20policy%20measures](https://ec.europa.eu/taxation_customs/inward-processing_en#:~:text=Inward%20processing%20means%20that%20non,purposes%20of%20manufacturing%20or%20repair.&text=Import%20duty,Commercial%20policy%20measures).

<sup>6</sup> Ziedina & Pelse (2017).

The five SEZs have the same overall objectives: to attract investments, develop infrastructure and production, create new jobs, and promote export growth and industrial activities, which in turn is expected to improve the economic development in the regions of the SEZs.<sup>7</sup>

The zones have different business focuses.<sup>8</sup> The coastal SEZs, Liepāja and Riga, focus on trade, warehousing, storage, shipping, and passenger transportation. In addition, Liepāja also has a focus on mechanical engineering, metalworking, manufacture of textiles. Ventspils is focused on engineering, electronics, automotive, IT, and chemical industry. The landlocked Rēzekne and Latgale SEZs are more focused on wood-working, manufacturing, metalworking, and food processing.<sup>9</sup>

## Governance

The Latvian SEZs are publicly owned companies that adhere to the national<sup>10</sup> and EU law on SEZs, which specifies the demand incentives that the SEZs can give.<sup>11</sup> The demand incentives are funded by the Latvian state.

## Incentives

The five SEZs have **corporate tax rebates** of up to 80% for investments in the SEZs, reducing the tax base for companies investing in the SEZs.<sup>12</sup> In Liepāja, Riga and Ventspils there are **property tax rebates** of 80% as well, whereas Rēzekne and Latgale have property tax rebates up to 100%.<sup>13</sup> The rebates can at maximum cover 55% of the investment costs for *small companies*, whereas it is 45% and 35% for medium and large companies, respectively.<sup>14</sup> The rebates are given in direct or indirect tax incentives for investments up to €50 million. For investments between €50 and €100 million, lower shares are applied, whereas there are no rebates for investments above €100 million.

The investments applicable to receive the rebates are investments in long-term tangible assets (buildings, machinery, and equipment) and intangible assets (obtaining patents and acquiring technologies).<sup>15</sup> There is

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<sup>7</sup> Based on Ziedina & Pelse (2017)

<sup>8</sup> Ezmale (2017).

<sup>9</sup> The SEZs do not support companies in every sector. For example, the Latgale SEZ does not have any support measures for transport companies, steel production, synthetic fibres, agriculture, fishery and aquaculture, and coal production. See <https://lpr.gov.lv/en/latgale-special-economic-zone/about-latgale-sez/#.X1ctjnkzY2x>.

<sup>10</sup> In practise, each there is a law for each individual SEZ.

<sup>11</sup> <http://likumi.lv/doc.php?id=33419>. The first law text around the Latvian free zones goes back to 1921. World Free Zones Organisation (2016).

<sup>12</sup> The 80% tax rebates are stated in the law on the SEZ, see <http://likumi.lv/doc.php?id=33419>.

<sup>13</sup> Riga, Liepāja, and Ventspils also have VAT exception for suppliers and services, excise and customs duties, which goes under operation as a free trade zone (indirect demand incentive). See <https://www.vid.gov.lv/en/special-economic-zones-and-free-ports>.

<sup>14</sup> These incentives are governed from the state government, see <https://www.liaa.gov.lv/en/invest-latvia/business-guide/business-incentives>. These cut-off shares have historically been higher but was lowered in 2014, see Ezmale (2017).

<sup>15</sup> Furthermore, for large companies the investment must qualify as *new, initial investment*. Also, the investments must remain in the SEZ for at least 5 years after the investment is made (at least 3 years for SMEs). See Ezmale (2017).

also an option to offset losses 10 years forward, and the companies can have increased rates of depreciation.<sup>16</sup>

As a new incentive from the summer of 2020, the Rēzekne and Latgale SEZs now offer salary rebates, meaning that the companies can deduct a share of the salaries they pay from their tax payments for up to two years. This follows the same cut-off shares (55%, 45% and 35% of the salaries).<sup>17</sup>

All SEZs have similar demand incentives in terms of tax rebates, but the SEZs differ in their supply incentives, which are provided locally.<sup>18</sup> Table 1.1 provides a summary of the zones and their incentives.

The Liepāja SEZ helps firms in vacancy registration and recruitment of staff. This SEZ also trains staff, including unemployed people at the employer's request, and provides IT training for small- and medium-sized companies. In addition, the SEZ sets up cooperation between companies by combining technological and engineering capabilities.

The Rēzekne SEZ has consultation services to companies who are in, or plan to operate in, the SEZ. In those consultations the SEZ helps with registration, taxes, duties, site selection, real estate consultation, etc. These consultations are supported both by the state and local municipalities.

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<sup>16</sup> World Free Zones Organisation (2016).

<sup>17</sup> Based on conversations with LIAA Investment and Development Agency of Latvia. This incentive will run until at least December 2024, where it will be evaluated. To be eligible for this incentive, it requires some initial investment and an initial agreement with the SEZ.

<sup>18</sup> Additional labour incentives, staff trainings, R&D incentives, and state rendered loans are available in Latvia, but these are not specific to the SEZ areas, as they can be obtained by all foreign investors.

**Table 1.1**  
**Overview of Latvian SEZs**

SEZ	Latgale	Liepāja	Rēzekne	Rīga	Ventspils
<b>Main financing of fiscal incentives</b>	For all: State				
<b>Area covered (ha)</b>	Up to 72,735	4,000	1,155	1,962	2,450
<b>Coastal</b>	No	Yes	No	Yes	No
<b>Corporate income tax reduction</b>	For all: 80%				
<b>Property tax reduction</b>	100%	80%	100%	80%	80%
<b>Tax rebates for labour</b>	Yes	No	Yes	No	No
<b>Limit to reduction</b>	For all: The SEZ tax incentives maximum return of the investment costs up to 55% for small companies, and 45% and 35% for medium and large companies, respectively				
<b>Real estate support*</b>	Liepāja				
<b>Help with staff recruitment*</b>	Liepāja				
<b>Staff training*</b>	Liepāja, Rēzekne				
<b>IT training for small and micro enterprises*</b>	Liepāja				
<b>Support in implementation of investment projects*</b>	Rēzekne				

Note: \*For the supply incentives, it is unknown whether such incentives exist in the other SEZ not listed.

Source: Multiple, see reference list

## 1.1 The economic impact of the Latvian SEZs

The benefits from SEZs are promotion of employment, increase diversification of export, active attraction of FDI, whereas more dynamic benefits are technology and skill transfers, verification of new policies, and promotion of the local economy.<sup>19</sup> FDI has been acknowledged for spurring economic development for example from knowledge spillovers,<sup>20</sup> although the effects differ depending on the type of FDI.<sup>21</sup>

SEZs can also lead to possible undesired outcomes such as low value-added production and heavy production conditions, as well as negative externalities, such as pollution.

<sup>19</sup> Ezmale & Rimšane (2014), Raņķevica (2006)

<sup>20</sup> See e.g. ESPON (2017)

<sup>21</sup> See e.g. Akkermans (2017), ESPON (2017)

Several studies conclude that the economic impacts of an SEZ are lower, if the infrastructure is poor, e.g. disorganized access roads and incomplete water supply, sewerage, heating, gas, electricity power etc.<sup>22</sup> Poor infrastructure in the SEZ is a risk to capital investments, as it increases the uncertainty for potential investors, which may lower their interest to invest. Poor infrastructure is especially a problem for the poorer Latgale region, which is the reason why the government granted €52 million to improve the infrastructure in the region in relation to the SEZs.

Other factors have been suggested to be important for investing in Latvian SEZs.<sup>23</sup> For Rēzekne, these include the proximity to several larger cities (including Riga, Vilnius, and Moscow) and the plurilingual abilities of the workforce, which is important for exporting products from the SEZ, but also from a sourcing perspective for the investing companies.<sup>24</sup>

### Results of the Latvian SEZs

Some of the Latvian SEZs track the number of companies and employment in the zones as well as the revenue and investment generated in the zone. For example, the Liepāja SEZ has 43 companies in the zone, which employ more than 2,000 people and have invested more than €16.5 million, see Table 1.2.<sup>25</sup>

**Table 1.2**  
**Summary of results in the Latvian SEZs**

SEZ	Number of companies	Employment	Accumulated investment	Revenue
Latgale	n/a	~100	n/a	n/a
Liepāja	43	2,219	€16.5 million	n/a
Rēzekne	18	852	n/a	€95 million
Riga	27	n/a	n/a	n/a
Ventspils	45	n/a	n/a	n/a

Source: The individual SEZ websites

The success of an SEZ is also influenced by potential competitors SEZs. For example, the Lithuanian FEZs have been argued to offer more attractive incentives than the Latvian SEZs, which ultimately result in firms investing in Lithuania instead of Latvia.<sup>26</sup>

<sup>22</sup> See literature review in Pule & Innuse (2017)

<sup>23</sup> Ezmale & Rimšane (2014)

<sup>24</sup> However, the study also finds that there is a lack of people who rapidly can switch from between languages in Rēzekne, which may hinder the attractiveness of investing.

<sup>25</sup> Numbers from 2017. See <https://liepaja-sez.lv/en/lsez/lsez-kapitalsabiedribas>

<sup>26</sup> An argument put forth in Pule & Innuse (2017).

There is some literature on impact assessments in Latvian SEZs, which also gives recommendations for *improving* the SEZs. The available assessments are only based on *qualitative* or *descriptive data*.

One study<sup>27</sup> finds that SEZ turnover have grown in the Liepāja port (+15% from 2001 to 2004), Riga Free Port (+16%) and Rēzekne SEZ (+18%), as well as an observed growth in wages. However, there are large variations in the magnitude of the observed wage increases for different employees in the SEZs. Furthermore, despite the turnover growth, the Rēzekne SEZ has not performed well since it has attracted few investments to the SEZ.

The effectiveness of the Latvian SEZs in attracting FDI is examined in another study,<sup>28</sup> using Latvian SEZ data<sup>29</sup> and data on SEZs in other countries. The data is incorporated into a profitability model where the investment and employment in the SEZs are compared to the land size of the SEZ, using simple comparisons without taking into account other factors. The results are descriptive, and the results should be treated as indicative rather than conclusive. The author finds that in general, the Latvian SEZs underperform in terms of jobs created and investments attracted into the SEZs, both in absolute numbers and relative to the size of the region. The SEZs in Poland, China, Jordan, Serbia, Panama, and the Dominican Republic all have better results than Latvia.

The knowledge spillovers from foreign investments in the SEZs are also expected to be lower in Latvia compared to the other countries, since employment in the Latvian SEZs is lower than in the other countries, both in absolute and relative terms. Based on the parent study of this policy brief,<sup>30</sup> knowledge spillovers arise from the share of employment that are employed in foreign owned firms. When foreign firms invest in a region through FDI, they bring with them inherent knowledge in the company that can spill over into the region they invest in, which can increase the knowledge (human) capital in local firms and thus increase productivity. The knowledge spill-overs arise from knowledge sharing in the supply chain, vertical integration, and from people employed in the foreign firm when changing their job, etc.<sup>31</sup> Thus, with a low level of employment in the Latvian SEZs relative to the size of the regions they are located in, it is expected that the knowledge spill-overs from the foreign investments in the SEZs to local Latvian firms are low.

The effectiveness of Latvian SEZs is found to be lower than in the other countries, using *FDI and number of people employed per hectare* in the SEZ as rough indicators for the *productivity* in the SEZs. The author argues that China, the Dominican Republic and Jordan have succeeded with their SEZs with high employment and FDI both in absolute terms and relative to the size of the designated SEZs. For example, the SEZs in Jordan accounted for almost 70% of all FDI into Jordan, while the equivalent share is less than 3% in Latvia. Also, the Latvian SEZs are behind more similar countries such as the SEZs in Panama, Serbia, and Poland. For example, 0.6 jobs are created per hectare designated as SEZ area in Latvia, whereas Poland's and Serbia's numbers are above 13 jobs per hectare. Similarly, the level of invested capital per hectare is much lower in Latvia than in Poland and Serbia.

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<sup>27</sup> Raņķevica (2006). The study also finds that SEZ is an instrument promoting trade *at ports*, which is substantiated by increasing cargo volumes at Riga and Liepāja ports.

<sup>28</sup> Gulbis (2018).

<sup>29</sup> Problematically, the analysis was limited by lack of access to data records in the SEZ examined, as many SEZ administrations does not gather the relevant data. In Latvia, only Rēzekne and Liepāja collect the necessary data for the analysis.

<sup>30</sup> See ESPON (2017).

<sup>31</sup> For a more in-depth description of these spill-overs, as well as concrete results, see ESPON (2017).



### Recommendations in the literature

Overall, the conclusion is that the Latvian SEZs have achieved some employment and investment attraction in their SEZs, but their SEZs do not perform as well as SEZs in other countries in terms of jobs created and investments. To improve this, the literature proposes several solutions:

- The SEZs should not only operate by themselves in a vacuum but should be supported by other government policies.<sup>32</sup>
- The Rēzekne and Latgale SEZs are in harder competition with the neighbouring countries Lithuania, Russia, and Belarus to attract foreign investors. The SEZs should therefore have enhanced and more focused incentives, to create a differentiated and improved investment support for Rēzekne to improve their investment attraction relative to its competitors in other countries.<sup>33</sup>
- The institutional mechanism for the management and supervision of the SEZs are complicated and hinder the operation of a successful SEZ, especially due to complex laws on the individual SEZs and slow supervisory management. The management of an SEZ could be assigned to a private company in a public tender to improve the efficiency of the SEZs (see the Lithuanian case).<sup>34</sup>
- Furthermore, the general infrastructure (road, rail, utilities, internet) needs to be continuously developed to enhance the zones' attractiveness.

The volatility in the Latvian tax policy may scare away foreign investors as they plan business activities years ahead.<sup>35</sup> A steady tax rate lowers the investment risk for potential investors.

## 1.2 Relevance for Hungary

The Latvian SEZs have similar incentives as the Hungarian FEZs as both countries have tax reductions for investment costs. Another similarity is that the individual SEZs offer different supply-side incentives to investors.

However, the Latvian SEZs have different territorial coverage than the Hungarian FEZs as they only cover small, dedicated areas in Latvia (except for the Latgale SEZ) and not whole municipalities as in Hungary.

Looking at the *individual* Latvian SEZs, the Rēzekne and in particular the Latgale SEZs are most similar to the Hungarian FEZs as they are landlocked areas, and their objectives of developing the poorest region of Latvia is similar to the objectives of the Hungarian FEZs.

The take-aways in terms of impact assessments from the Latvian case are mainly the usefulness of comparing the performance of the Hungarian FEZs with other SEZs in comparable countries in terms of *jobs created* and *investments attracted*, both in absolute terms and relative to the size of the SEZ and region.

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<sup>32</sup> Gulbis (2018).

<sup>33</sup> With the new labour incentive from 2020, this is already considered by the government.

<sup>34</sup> Raņķevica (2006).

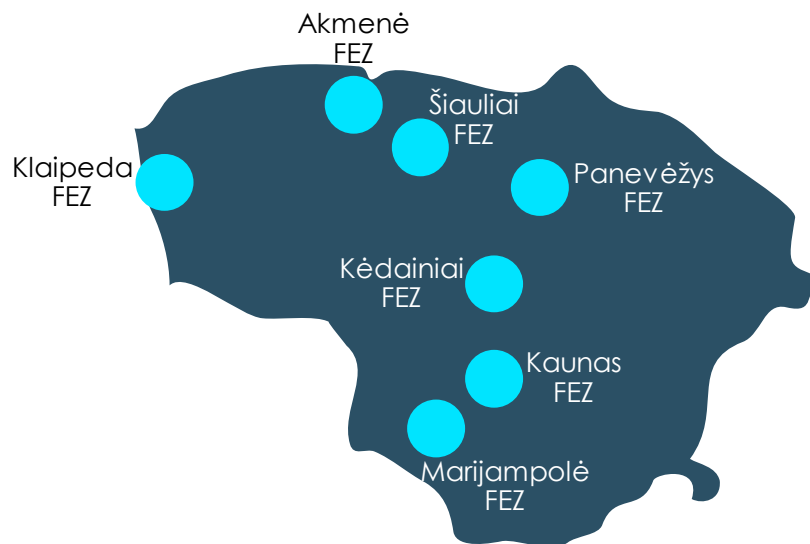
<sup>35</sup> Pule & Innuse (2017). Volatile state provisions and taxes are problems for SEZs to attract FDI in general.

## 2 The Lithuanian Free Economic Zones

There are seven SEZs in Lithuania, which are all named Free Economic Zones (FEZs), as in Hungary.<sup>36</sup> The two first FEZs in Lithuania were established in Kaunas (1998) and Klaipėda (2002), whereas the rest were established in the period 2011-2015. The Klaipėda FEZ is located on the coast with access to the Baltic Sea and the other six FEZs are located inland, see Map 2.1. The Lithuanian FEZs have dedicated areas with strict boundaries for the FEZs ranging from 47 hectares (Panevėžys) to 534 hectares (Kaunas).<sup>37</sup>

Except for the capital, Vilnius, the largest cities in Lithuania have a FEZ: Kaunas, Klaipėda, Šiauliai, and Panevėžys are the second to fifth largest cities in Lithuania with populations above 80,000 people. Marijampolė, Kėdainiai and Akmenė are smaller cities with a population of less than 40,000.

**Map 2.1**  
**Map of Lithuanian FEZs**



Source: The local FEZ websites

The objectives of the Lithuanian FEZs are to encourage the growth of industry and to create jobs in least-developed regions of the country by promoting (especially greenfield) investments.<sup>38</sup> As in Latvia, the Lithuanian FEZs focus on specific sectors. For example, Klaipėda has a focus on plastics, renewables, automotive and electronics.<sup>39</sup> The decisions on the locations of the FEZ are to some extent based on:<sup>40</sup>

<sup>36</sup> In addition to the FEZ, we have found nine industrial parks in Lithuania, which do not have special incentives but rather has it as their goal to attract FDI.

<sup>37</sup> Investuok Lietuvoje (2018).

<sup>38</sup> Based on discussions with Invest Lithuania.

<sup>39</sup> Based on discussions with the Klaipėda FEZ.

<sup>40</sup> Based on discussions with Invest in Lithuania. The territorial boundaries are specified in the individual FEZ laws, see on <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.38026?jfwid=ffhu5mkfh>

1. the need to attract investments, for example due to high unemployment
2. the likelihood of attracting investments to the zone, for example that there is a sufficient supply of talent and workforce (human capital) and/or that the zone is in a logistically attractive location

However, several of the FEZs (Kaunas, Klaipėda and Kėdainiai) are located in regions with relatively *low unemployment*. The capital region of Vilnius has the highest GDP per capita, whereas the Kaunas and Klaipėda regions have a GDP per capita on the country average.<sup>41</sup> The other FEZs are all located in regions that has at least 20% lower GDP than the country average, while especially the Marijampolė region's GDP per capita is almost 40% lower than the country average and almost 60% lower than in the Vilnius region. Thus, the Lithuanian FEZs are mainly located in relatively low-income areas.

## Governance

The Lithuanian FEZ have a **different governance setup** than the other case studies. The incentives are publicly financed as in the other countries, but the organisations of the FEZs are controlled by private companies. Based on a public tender process, the government selects private zone management (PZM) companies which leases the land in the FEZ from the government. There are different PZM companies operating in the different FEZs. The PZM companies are responsible for the FEZ management, attracting investors and issuing the authorization for the operation in the zone.<sup>42</sup> The PZM companies should also to some extent develop the infrastructure in the FEZ (roads, supply of utilities etc.).<sup>43</sup> However, the government has also invested in these zones. The total public development costs of the FEZs amounted to €69 million in the period 2002-2017, of which 64% were EU funded. These costs are related to site preparation, investment in infrastructure, and costs for cleaning polluted land.<sup>44</sup>

The PZM companies generate revenue from subleasing the land to investors, as well as earning a rent from the infrastructure management and other services they provide in the FEZs. Being private companies, they are often able to act fast and are flexible when assisting clients so the investors quickly can start operating in the zone.

## Incentives

An investor needs to invest at least €1 million in fixed assets to qualify for these incentives.<sup>45</sup> In all Lithuanian FEZs, firms do not have to pay corporate income tax during the **first ten years** of operating in the Lithuanian FEZ. After the ten years, the corporate income tax is 7.5% for the **following six years**, which is half of the normal rate (15%).<sup>46</sup> Furthermore, the real estate tax and dividend tax for ownership of firms in the zone are 0%, currently without an end-date. The incentives are determined by the state and approved by the European Commission. The total amount of aid cannot exceed 25% of the size of the initial investment.<sup>47</sup> As with the Latvian case, there are also specific incentives for the different FEZs, which are mainly focused around supply side incentives, see Table 2.1.

The FEZs invest in infrastructure to supply different utilities; water supply, collection of waste water, gas, electricity, telecom connectivity etc., which the investors find relevant to access to from the beginning.<sup>48</sup> Since the FEZs are specified zones, supplying these utilities is relatively cost effective, since several firms often need utilities within the zone. The Klaipėda FEZ even have buildings ready that quickly can be adjusted to the investor's need,<sup>49</sup> which includes a 7,500 square meter manufacturing space that quickly can be adapted to the individual needs of a customer within three months. This flexible option won the Klaipėda FEZ an award from fDi Intelligence.<sup>50</sup>

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<sup>41</sup> Based on numbers from Eurostat.

**Table 2.1**  
**Overview of Lithuanian FEZs**

FEZ	Akmenė	Kaunas	Kėdainiai	Klaipėda	Marijampolė	Panevėžys	Šiauliai
<b>Main financing of fiscal incentives</b>	For all: state						
<b>Area covered (ha)</b>	99	534	131	412	78	47	133
<b>Coastal</b>	No	No	No	Yes	No	No	No
<b>Corporate income tax</b>	For all: 0% for 10 years, then 7.5% for 6 years						
<b>Property tax reduction</b>	For all: 0%						
<b>Dividend tax</b>	For all: 0%						
<b>Expenses for R&amp;D can be deducted three times*</b>	Klaipėda						
<b>Support in setting up a company*</b>	Klaipėda, Marijampolė, Panevėžys, Šiauliai						
<b>Support in project opportunities from EU and other financial support*</b>	Akmenė						
<b>Possibility to adjust the infrastructure to the needs of a concrete activity*</b>	Kaunas						
<b>Offering flexible manufacturing facilities*</b>	Klaipėda						
<b>Unlimited currency exchange*</b>	Marijampolė						

Note: \*For the supply incentives, it is unknown whether such incentives exist in the other FEZ not listed.

Source: Multiple, see reference list

<sup>42</sup> In the latest tender from 2012, the contract was set to 49 years.

<sup>43</sup> The PZM may also set up certain rules, fees, etc. in the zones.

<sup>44</sup> Investuok Lietovoje (2018).

<sup>45</sup> Lithuania is also planning to exempt certain companies (manufacturing and data service) from corporate income taxes if they invest a sufficiently large amount, also *outside* the FEZs.

<sup>46</sup> See Pule & Innuse (2017)

<sup>47</sup> Investuok Lietovoje (2018)

<sup>48</sup> See <https://www.zdnet.com/paid-content/article/lithuania-a-discovery-for-industrial-companies/>

<sup>49</sup> Based on discussions with the Klaipėda FEZ.

<sup>50</sup> <https://lafez.lt/fez-overview/?lang=en>, <https://www.feز.lt/invest-lithuania-fez-future-belongs-to-plug-play-solutions-and-record-breaking-launch-speed/>

## 2.1 The economic impact of the Lithuanian FEZs

Since the FEZs usually are set up in deprived regions, the main market for the products produced in the FEZ is often not in the region of the FEZ. Therefore, sales to the rest of the country and exports out of the country are expected to be the main income for the investing company. There are five general reasons why foreign investors invest in Lithuania:<sup>51</sup>

1. Investor-oriented talents
2. High-quality infrastructure and living conditions
3. Price-quality ratio
4. Business-friendly environment
5. Financial incentives

The wages in Lithuania have been rising, which is why the FEZs have focused on other factors such as launch speed, workforce size, human capital, fewer bureaucratic procedures, infrastructure, ecosystems, and opportunities to create and develop new products.<sup>52</sup> It has become increasingly important for investors to settle quickly in the zones,<sup>53</sup> which depend on the availability of fully developed plots, and potentially flexible production facilities that can quickly be adjusted to the investor's need, as the flexible manufacturing option in Klaipėda. For other parts of the FEZ area, the necessary infrastructure is not fully developed, which may be less attractive for some investors.

The seven FEZs in Lithuania have performed differently. Klaipėda and Kaunas have received large investments, whereas there is less invested capital in the Kėdainiai and Šiauliai FEZs, see Table 2.2.<sup>54</sup>

**Table 2.2**  
Summary of results in the Lithuanian FEZs

SEZ	Number of companies	Employment	Accumulated investments
Klaipėda	~130	5,400	€630 million
Šiauliai	n/a	n/a	€15 million
Kėdainiai	n/a	n/a	€4 million
Kaunas	29	3,500	€490 million
Marijampolė	n/a	n/a	€100 million
Akmenė	n/a	n/a	n/a
Panevėžys	n/a	n/a	€13 million

Source: The individual FEZ websites and <https://lithuaniantribune.com/great-results-at-the-klaipeda-free-economic-zone/>.

<sup>51</sup> See <https://www.zdnet.com/paid-content/article/lithuania-a-discovery-for-industrial-companies/>

<sup>52</sup> See <https://www.fez.lt/invest-lithuania-fez-future-belongs-to-plug-play-solutions-and-record-breaking-launch-speed/>

<sup>53</sup> Investuok Lietoje (2018)

<sup>54</sup> <https://lithuaniantribune.com/great-results-at-the-klaipeda-free-economic-zone/>

There is **one** in-depth report of the Lithuanian FEZs. This is a report by Invest in Lithuania<sup>55</sup> that examines the economic impact of the Lithuanian FEZs. The report is *not* considering a counterfactual scenario, but it does to some extent consider *additional* effects of the Lithuanian FEZ.

The report makes two separate analyses, a cost-benefit analysis of value added (not including employment or taxes) and an analysis on the impact on public finances (taxes).<sup>56</sup>

The **cost-benefit analysis** was made on already implemented investments and future expected investments.<sup>57</sup> The report examines the FEZ tax loss and development costs (site development, tax loss, etc.) of the FEZs and relates them to the (additional) benefits that the Lithuanian economy gets from the economic activity from businesses in the FEZs (employment, high productivity, exports).

The report estimates that the positive impact of the FEZs was **€740 million in value added** in the period 2002-2017.<sup>58</sup> The forecasted economic impacts are expected to increase due to new expected investments in the FEZs and that much of the development costs have already been held. In total, the benefits of the FEZ are found to be **47 times larger** than the cost, when considering future investments in the FEZ.<sup>59</sup>

The number takes into account that not all the value added can be attributed to the FEZs as some companies would be expected to operate and produce wages and company surplus regardless of the FEZ, i.e. they only include the net value added of economic activity that is *additional* thanks to the FEZs.<sup>60</sup> All companies in the FEZ were asked about their performance in the FEZ and whether the FEZ was a decisive factor for investing in Lithuania. Based on this, each FEZ company was assigned a *FEZ influence value*. These values can be different across employment, taxes, value added etc. For example, the share of employees attributable to the FEZ was 59% on average in 2017 and for taxes the share was 54%.

For the **impact on public finances**, the report analyses the taxes paid. These includes personal income taxes, social insurance, production taxes, and corporate income taxes. Total taxes paid from FEZ companies and employees were **€227 million in tax revenue** in the period 2002-2017,<sup>61</sup> of which €9 million were corporate taxes in the period 2013-2017, as firms have begun to pay corporate tax on their profits after the 10-year period with 0% tax.<sup>62</sup> In the coming years, the tax income is expected to increase as more investments are made in the FEZs and at the same time, the 10- and 16-year corporate tax rebates will run out for the firms currently operating in the FEZs.

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<sup>55</sup> Investuok Lietuvoje (2018)

<sup>56</sup> See the appendix for a description.

<sup>57</sup> The whole period considered is 2002-2043. For the report, actual data from 2002-2017 was used. For the remaining period, the results have been extrapolated.

<sup>58</sup> Similarly, the corporate profits have been 460 million in the period 2005-2017.

<sup>59</sup> Measured in constant value. A 7.4% social discount rate is used. See appendix for the explanation behind this.

<sup>60</sup> If all FEZ activities were included, the value added is €1.1 billion. This is evaluated as a share of the economic activity that are attributable to the FEZ. See the appendix for a description.

<sup>61</sup> In these numbers, taxes in supply chain is taken into account. See the appendix for a description.

<sup>62</sup> Information on corporate taxes are missing from before 2013, but they are expected to be low due to the incentives set up in the FEZs.

The authors find that the tax incentives amounted to **€20 million** in “lost” public revenue in the period 2002-2017, meaning that the **total public costs of the FEZs were €89 million** (€69 million<sup>63</sup> in development costs and €20 million in lost tax revenue).

The benefits of FEZ companies are not limited to the investments, jobs created, value added, taxes paid, etc., but firms also buy goods and services from local Lithuanian suppliers, which in turn contribute to the economic growth in local firms. Also, competences, knowledge and technology spill-overs are other important sources of long-term development and competitiveness.<sup>64</sup> In addition to the overall results, the report also finds that

- There is a positive impact from the FEZs **on public finances which is 6.6 times greater than the public costs**<sup>65</sup> of investments in infrastructure, land, and tax reliefs when considering the whole period 2002-2043.
- In 2017, **5,000 people were employed** in 52 companies in the Lithuanian FEZs with annual revenues of €1.24 billion, of which 75% were exports. The exports from FEZs amounted to 6% of total Lithuanian exported goods. Furthermore, the FEZ companies imported less than they exported, resulting in a **positive effect on the balance of trade** from the FEZs. Almost 90% of the investments are made by foreign investors, employing more than two-thirds of the employment in the FEZs. Therefore, the foreign firms are also more capital intensive (higher investment per employed) than the local firms investing in the FEZ.
- On average, the employees in the FEZ generated €82,000 of revenue in 2017 for *local Lithuanian suppliers* in purchases of goods, services, and investments in fixed assets, which is €30,000 more than the average Lithuanian firm, thus supporting more jobs in the supply chain. This means that **five jobs in a FEZ supports eight jobs in local Lithuanian firms**.
- The **average wage in the FEZs is 9% higher** than in the aggregate Lithuanian manufacturing industry, resulting from a higher productivity in the FEZs. This may be due to a selection bias of firms operating in the FEZ, which the authors do not take into account.

This study does not make a counterfactual analysis, and therefore the results should be interpreted with caution. However, the report does consider *additional* effects of the FEZs from analysing the economic activity attributable to the FEZs, i.e. would not be there without the FEZs. These rely on survey results of the FEZ firms and are therefore based on subjective criteria.

While the analysis made in the Invest Lithuania report is interesting and useful, proper counterfactual analyses that is not based on survey results would improve the validity of the results.

Another method used in Lithuania to evaluate the territorial development is using *Territory development index* (TDIs).<sup>66</sup> TDI measures socio-economic differences in regional development. Using this index one can assess the relative socio-economic development of a SEZ compared to other regions. The TDI can also be used when determining the level of support from the state government. For regions with relatively low TDI, more support for the SEZ incentives can be put in place. Lithuania measure three types of indexes, although it is not clear exactly how they use these indexes:

1. an index for evaluating the social differences

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<sup>63</sup> 80% of this were financed by EU structural funds.

<sup>64</sup> See also ESPON (2017).

<sup>65</sup> Measured in constant value.

<sup>66</sup> Pule & Innuse (2017)

2. an index for evaluating the economic differences
3. an integrated index for evaluating the agricultural development level

It is mainly the first two that are relevant in the context of the economic impact of FEZs.<sup>67</sup> These indexes may be relevant for evaluating the broader impacts of the FEZ in the regions they are located. One needs to be aware that this is a simple way of measuring impacts as it does not take other factors into consideration. Therefore, the indexes could be used in a more comprehensive econometrics study of the economic impacts, also taking other factors into account.

### Recommendations in the literature

The Lithuanian FEZs have been successful in attracting investments to such an extent that there now are discussions whether there is a large enough supply of plots for new investments in some of the FEZs, and there is a need for further infrastructural development in some of the remaining plots to make them ready for investors. An expansion of the FEZs and further development of existing plots would require new public investments in the necessary infrastructure.<sup>68</sup> Another discussion point is that some of the FEZ cannot supply the right size of plots to potential investors' needs, also because there is a trend towards investors demanding larger plots. The recommendations in the literature are therefore to continue investing in the FEZs and expand on the areas designated to the FEZ.

## 2.2 Relevance for Hungary

The objective of FEZs in Lithuania is to encourage the growth of industry and less-developed regions and to attract investments and employment e.g. in regions with high unemployment (the need for investments). This focus for selecting FEZs is similar to the Hungarian FEZ, but there is also a need to have a good likelihood of attracting investments in the Lithuanian FEZs, which is not part of the selection of FEZs in Hungary.

The Lithuanian case also has a blended (private and public) governance structure, which is different from the Hungarian case. As in Latvia, the Lithuanian FEZs are dedicated areas, where infrastructure and utilities can be supplied relatively cost-effectively.

One option for Hungary is to consider having dedicated FEZ plots for investors, where the necessary infrastructure and utilities is supplied to cost-effectively. It is probably not effective to have these plots in every one of the 1,202 Hungarian municipalities, but it may be considered to group the municipalities together, where each municipality group has one common FEZ.

Another option for Hungary to consider is adopting the Lithuanian governance setup where private PZM companies administer the FEZ, attracts investors, and rents out the land. However, it has not been explicitly evaluated how this governance setup has impacted the results of the Lithuanian FEZs. The suggested benefits are that private companies have a stronger incentive to operate more effectively than public authorities, if there are potentials for them to earn a profit from operating the FEZ. However, it may also come at an additional cost for the investors, as private companies typically have higher wages and earn profits.

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<sup>67</sup> The social differences index consists of demographic dependency ratio, employment per 1000 inhabitants, and share social assistance recipients. The economic differences index consists of registered companies per 1000 inhabitants, share of working-age population

<sup>68</sup> Investuok Lietovoje (2018)



### 3 The Polish Special Economic Zones

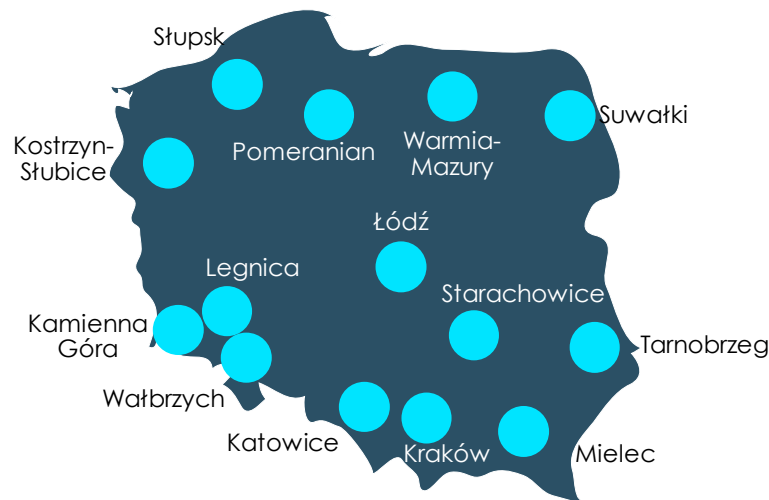
There are 14 SEZs in Poland, and they are scattered across the country, see Map 3.1 **Error! Reference source not found.** Each SEZ is its own administrative publicly owned company, but there is also a central administration at the Polish Investment & Trade Agency (PAIH).

Up until 2018, the SEZs covered only 0.1% of the area of Poland in designated areas as in the other case studies. A new law from 2018 expanded the zone to cover the whole country under some conditions. This means that firms do not have to physically be in a designated zone to be eligible for public aid. The change is seen as “*an organic development driven by the needs of the investors*”.<sup>69</sup> In this case study, we mainly consider the structure before 2018, as the impact assessments in the literature are made based on this structure.

Poland's SEZs are interregional and compose of different subzones within the different regions. The current SEZs, which were established between 1995 and 2001, will run until 2026. The Polish SEZs are considered among the most effective and successful SEZs in the world, and some of them are also awarded among the best in the world.<sup>70</sup>

#### Map 3.1

Click or tap here to enter text.



Note: For a more complete map, where subzones are depicted, see

[https://www.paih.gov.pl/why\\_poland/investment\\_incentives/sez#](https://www.paih.gov.pl/why_poland/investment_incentives/sez#)

Source: PAIH website.

<sup>69</sup> See <https://polandin.com/37164479/poland-becomes-a-special-economic-zone-for-investors>

<sup>70</sup> Katowice and Łódź are listed second and eighth best free zone in the world in 2019, see fDi Magazine (2019). Furthermore, some other Polish SEZ have also received awards. The Polish SEZ have received awards within best connectivity, 5G readiness, number of new investments, start-up support, tech transfer, workforce amenities, SMEs, and appliance specialism.

The zones were established in the 1990s to speed up economic development of the poorest Polish regions by attracting new foreign capital and combat structural unemployment. In the 1990s, Poland had unemployment rates above 14%, and especially the rural areas had high unemployment.<sup>71</sup> The SEZs aim to attract investments within most sectors, but some of the individual SEZs focus on industries where they have a comparative strength.<sup>72</sup>

## Governance

The Polish SEZs are publicly owned companies and the treasury or the regional government hold the majority shares in these companies that operate the SEZs. The SEZs provide a piece of land for the investors to rent and develop. The investors sometimes also need to develop the necessary infrastructure on the land, and this process often requires involvement from the local government, with assistance from the SEZ. In some areas, the infrastructure is developed on the SEZ plots.

## Incentives

The main demand-side incentives in the SEZs are tax exemption for corporate- and personal income tax, and the investor may also be exempt from real estate tax. These incentives apply for capital expenditures for at least five years or for creation of new workplaces maintained for at least five years (three years for SMEs). The tax exemption lasts for 10-15 years depending on the regions.

There is an upper level for the aid that can be received. The state aid covers up to 25-50% for large companies, 35-60% for medium-sized companies and 45-70% for small companies.<sup>73</sup> The size of the public aid and the number of years the aid is given depend on the area the SEZ is located in, and also within different sub-territories of the SEZs. In general, regions with relatively high unemployment can provide more aid for a longer time, i.e. the Eastern regions in general have more SEZ aid than the Central and Western regions because their unemployment rates are higher. Also, the initial investment needed to be eligible for aid is also smaller in regions with higher unemployment.<sup>74</sup> In order to obtain the aid, it is necessary to meet certain quantitative and qualitative criteria which may vary across different SEZs.

Poland is changing the tax incentives from the designated SEZ areas in specific geographic locations to a point where any territory in the country could be a SEZ, if they fulfil certain conditions.<sup>75</sup> In 2018, the Polish government adopted the New Investment Support Act, which means that the special incentives now apply to the entire country: the “*Polish investment Zone*”.<sup>76</sup> To receive public aid, there are some quantitative requirements such as minimum investment costs that depends on the unemployment of the district. For example, if the unemployment rates in the region is less than 60% of the country average, the minimum investment required is PLN 100 million (€22 million), whereas the minimum investment is PLN 10 million if the

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<sup>71</sup> <https://www.centreforpublicimpact.org/case-study/special-economic-zones-poland/>

<sup>72</sup> These sectors include automotive, electronics and household appliances, aviation, biotechnology, food processing, ICT, R&D activities, textiles and clothing, timber, paper and furniture, chemicals and petrochemicals, metals and machinery. Polish Investment and Trade Agency (2017) & KPMG (2012)

<sup>73</sup> With the new setup from 2018, there are areas where maximum aid given is 10% (Warsaw).

<sup>74</sup> See [https://www.paih.gov.pl/why\\_poland/Polish\\_Investment\\_Zone#](https://www.paih.gov.pl/why_poland/Polish_Investment_Zone#)

<sup>75</sup> <https://www.fez.lt/invest-lithuania-fez-future-belongs-to-plug-play-solutions-and-record-breaking-launch-speed/>

<sup>76</sup> EY (2018)

unemployment rate is more than 250% of the country average.<sup>77</sup> There is also qualitative requirement such as sustainability factors, export-oriented sales, high-quality jobs and R&D activities.<sup>78</sup> These can also affect the amount of public aid given.

As with the other cases, the supply-side incentives are more specific to the individual SEZ. These are for example related to running or subsidising training, business support for SMEs, contacts with academic centres, and organisation of internships. Table 3.1 summarises the incentives across the Polish SEZs.

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<sup>77</sup> The minimal investment needed depends on the unemployment rate in the district (*powiat*). See <https://www2.deloitte.com/pl/en/pages/tax/articles/tax-alerts/polska-staje-sie-specjalna-strefa-ekonomiczna.html> and [http://en.ssemp.pl/wordpress/?page\\_id=9931](http://en.ssemp.pl/wordpress/?page_id=9931)

<sup>78</sup> See [https://www.paih.gov.pl/why\\_poland/Polish\\_Investment\\_Zone#](https://www.paih.gov.pl/why_poland/Polish_Investment_Zone#)

**Table 3.1**  
**Overview of Polish SEZs**

SEZ	Kamienna Góra	Katowice	Kostrzyn-Słubice	Kraków	Legnica	Łódź	Mielec	Pomeranian	Słupsk	Starachowice	Suwałki	Tarnobrzeg	Wałbrzych	Warmia-Mazury
<b>Financing of incentive</b>	For all: state													
<b>Coastal</b>	No	No	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No	No
<b>Tax exemptions for investments</b>	For all: Yes. The state aid covers up 25-50% for large companies, 35-60% for medium sized companies and 45-70% for small companies													
<b>Plans for preparing new investment areas.</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Training assistance*</b>	Kraków, Łódź, Pomeranian													
<b>Business support for SMEs*</b>	Łódź													
<b>Organisation of internships*</b>	Pomeranian													

Note: \*For the supply incentives, it is unknown whether such incentives exist in the other FEZ not listed.

Source: Based on the individual SEZ websites and the PAIH website.

### 3.1 The economic impact of the Polish SEZs

The individual Polish SEZs annually track some key performance indicators, which they report on the PAIH website, and they publish a report on the effectiveness of their zone, containing information on the number of jobs created, the amount of investments, and the number of business licenses.

Up until 2012, €20 billion had been invested in Polish SEZs.<sup>79</sup> In 2017 alone, the SEZs attracted investments of €5 billion and 16,000 jobs were created in the SEZs. Furthermore, every fifth project in the SEZs was an investment by an SME. See Table 3.2 for an overview of the most recent results.

<sup>79</sup> See <https://www.centreforpublicimpact.org/case-study/special-economic-zones-poland/>.

Around 80% of the investments in the SEZs were invested by foreign investors by 2012, with German and American investors accounting for 16% and 12%, respectively. Manufacturing investments accounted for 96% of the invested capital in the period.<sup>80</sup>

**Table 3.2**  
**Summary of results in the Polish SEZs**

SEZ	Number of companies	Employment	Accumulated investment
Kamienna Gorá	53	7,600	€0.6 billion
Katowice	400	80,000	€8.4 billion
Kostrzyn-Stubice	150	65,000	€2.2 billion
Króków	~200	30,000	~€1.0 billion
Legnica	57	16,095	€1.5 billion
Łódź	167	70,000	€3.3 billion
Mielec	191	46,000	€2.3 billion
Pomeranian	139	27,000	€2.5 billion
Słupsk	75	7,000	€0.5 billion
Starachowice	76	9,500	€0.7 billion
Suwałki	128	10,000	€0.7 billion
Tarnobrzeg	156	25,000	€2.0 billion
Wałbrzych	215	95,000	€5.6 billion
Warmia-Mazury	148	25,000	€1.0 billion

Source: The individual SEZ websites

There are several academic studies on the economic impacts of the Polish SEZs. We have selected the most relevant studies which use different methods in estimating the economic impact. The studies mainly show positive effects of the Polish SEZ, but there are also some negative results. Also, different papers even find different outcomes for the same variables.

One study<sup>81</sup> specifically examines the impact of tax incentives of firms' decision to locate to the Polish SEZs. The study is *based on a survey* conducted in 2014 and 2015 among companies in the SEZs<sup>82</sup> and thus is the investors' subjective opinions about tax policy in the SEZs. The results show that the tax incentives are important for the investors to locate in the zone and that income taxes are more important for investors than the general local costs level of doing business. The firms differ in their evaluation of the importance of tax support depending on their size and location in different SEZs. Smaller firms tend to benefit more from tax reliefs to overcome some general difficulties that smaller firms experience (e.g. lack of economies of scale, relative higher share of costs going to administrative procedures, etc.).

<sup>80</sup> Ciżkowicz et. al (2015).

<sup>81</sup> Magdalena & Koziński (2015).

<sup>82</sup> The study highlights that this is a simple way of measuring the impact of SEZ and more in-depth advanced studies are necessary to get the full picture of the economic impacts.

Another study<sup>83</sup> finds that there is a higher degree of export concentration within the SEZs, which is a consequence of SEZ firms specialising in products for exports. Firms in the SEZs generally operate in a more international environment for sales and supply chain than the average firms in Poland, the firms have higher competitiveness<sup>84</sup> than local firms, and are more engaged in own R&D and cooperation with external R&D. This is found based on a revealed comparative advantage (RCA) index and as well as other indices, and the authors do not consider counterfactual analysis.<sup>85</sup> The authors conclude that more preferential treatment of competitive or innovative firms will increase the positive effects from the export-oriented firms in the SEZs.

An academic paper<sup>86</sup> analyses firm-level data on Polish SEZs for the period 2003-2012 and finds that SEZs have substantially positive effects on employment. The authors use a fixed effects econometric model considering spatial interregional effects using a Spatial Durbin Model (SDM).<sup>87</sup> They do *not* consider a counterfactual analysis but focus more on additional spatial spill-over effects from the FEZs.

The jobs created in the SEZs also generate jobs in the whole county where the SEZ is located, and even more jobs in neighbouring counties. The employment in the SEZs rose from 61,000 in 2003 to 247,000 in 2012. Most of these effects arose after Poland joined the EU in 2004. The results show that for every **100 jobs in a Polish SEZ, 72 additional jobs are generated outside the SEZ in the county and 137 jobs outside the county**, meaning that the employment in the SEZs *crowd-in* employment in surrounding counties.

There is also a positive effect from the SEZs on investment, but this effect is found to be weaker than the job effect. The investment *in the SEZ* neither crowd-out nor crowd-in investments *outside the SEZ*, meaning that the SEZ investments do not prevent other investments from being made, nor do they encourage new investments in other firms. Thus, the SEZ investments give a one-to-one increase in the capital stock in Poland. The authors also find that there can be large differences in the impacts for different SEZs, even for economically and geographically similar SEZs.

Other papers have also analysed the additionality of the Polish SEZs. One paper<sup>88</sup> argues that the economic impact of the Polish SEZs is positive, additional and have positive effect on the surrounding economy from an increase in value added from increased production. However, the paper does not set up a counterfactual situation.

The authors estimate the effects in net present value (NPV) of discounted cash flows of exports, import, domestic sales, taxes, public aid, infrastructure expenditures and administrative costs. These resulted in a positive NPV for the Polish SEZs of **USD 116 billion** (approximately €100 billion<sup>89</sup>) for the period 2001-2012.

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<sup>83</sup> Nazarczuk & Umiński (2019).

<sup>84</sup> The increased competitiveness stems from higher productivity in the SEZ companies. The higher productivity can also result in lower employment relative to the size of the capital investments, i.e. higher capital investments are needed to uphold the same level of employment in the SEZs, see Franczak (2015).

<sup>85</sup> See appendix for a description.

<sup>86</sup> Ciżkowicz et al (2015). Another study (Smetkowski (2002)) do find some substitution of economic activity from the SEZs, but that the zones still are effective in employing previously unemployed people up to 50% of the employment. It should be noted that this study is from 2002.

<sup>87</sup> See appendix for a description.

<sup>88</sup> Pastusiak et al (2018). The authors use P. Warr's *enclave model* from 1983 that describes the economic zone as a closed economy that have some cooperation with the surround economy.

<sup>89</sup> Based on exchange rate on October 14, 2020.

This method is somewhat similar to the cost-benefit approach examined in the Lithuanian case, but this paper considers a shadow cost of public expenditures into the Polish SEZ instead of assessing the additionality by the share of economic activity attributable to the FEZ as in the Lithuanian report.

One study<sup>90</sup> uses a counterfactual evaluation method on the Polish SEZs examining different metrics, including company investment.<sup>91</sup> The authors find a strong positive impact from the SEZs on the development of the least-developed regions of Poland, but the SEZs have had weak or even negative economic impact in relatively richer regions. In their methodology, the authors set up counterfactual impact evaluations for all subzones of the 14 SEZs. They set up a group of “treatment regions” (with an SEZ) and a “control group” (without an SEZ). Then the authors started their comparison between the treatment and control group using data for the period 2005-2013 on a NUTS4 level.<sup>92</sup> The comparison was done using a difference-in-difference method to compare the economic development for regions with and without an SEZ for several variables:

- Gross value added of fixed assets per company
- Number of entrepreneurs in a region
- Unemployment rates

The authors find that in the period 2005-2013, the *SEZ regions experienced productivity increases* (increases in value added per invested unit), relative to the control groups. This effect was larger for SEZs in relatively poorer regions, and for SEZs which received large investments.<sup>93</sup> The authors conclude that the SEZs have a positive economic impact per capita in the SEZ regions, especially in the relatively poorer regions. However, they do not find statistically significant evidence that SEZs have let to *absolute increases in the investment stock* in the SEZs, relative to the control groups, partly due to the initial level of investment stock, which were much lower in relatively poorer regions.

The authors also find that the *unemployment decreased more* in regions with SEZs, than in the control group regions. This is mainly the case for the least developed regions. The authors did not find any effects on the number of firms between the two groups.

Some studies find more negative effects from the SEZs. For example, one study<sup>94</sup> uses Spearman’s rank correlation and Pearson correlation<sup>95</sup> and finds that while the SEZs attract FDI and employ people,<sup>96</sup> they do not reduce the regional economic differentiation in Poland and may even deepen the regional disproportions in Poland. The authors conclude that the state interferences that were intended to mitigate market imperfections (such as structural unemployment and potential asymmetric information) instead become a source of imperfection themselves, which potentially increases the regional economic differentiation.

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<sup>90</sup> Ambroziak & Hartwell (2018)

<sup>91</sup> The counterfactual method does not consider the effects of external factors, which affect research regions covered as well as irrelevant characteristics. See appendix for a description.

<sup>92</sup> The data stems from the Polish Ministry of Economy and local bank data from the Central Statistical Office of Poland.

<sup>93</sup> See Ambroziak & Hartwell (2018), table 3

<sup>94</sup> Dorożyński et al (2017)

<sup>95</sup> The authors do not consider counterfactual analyses.

<sup>96</sup> The authors use statistical tools (Spearman’s Rank correlations and Pearson correlations) in their calculations of the effects.

A study made at the 20-year anniversary mark for the Polish SEZs<sup>97</sup> found that the SEZs have been somewhat successful in their regional development, but not across all parameters. The authors use a *difference-in-difference estimator* on panel data for the period 1995-2011 on NUTS4 and NUTS5-levels. They find **positive effects on FDI and business creation** and **small or insignificant effects on employment, wages, income, and investments** in the SEZs. Therefore, the authors argue that the zones have not fully managed to lift the poorer Polish regions out of relative within-country poverty. The main conclusion is that the policies in the SEZs may stimulate activity in the short run, but the SEZ policies must be temporary and therefore cannot stand alone. The SEZ policies must be complimented by other policies to ensure longer-term competitiveness and sustainable economic performance of the poorer regions in Poland.

The different results for employment in the papers using a difference-in-difference method<sup>98</sup> may stem from different time periods. Jensen & Winiarczyk (2014) use a period 1995-2011, whereas Ambroziak & Hartwell (2018) use data from 2005-2013. As most of the positive effects have been found after Poland's entrance in the EU in 2004,<sup>99</sup> the effects may be diluted in Jensen & Winiarczyk (2014) since the SEZs were performing poorly in the first half of their period. Furthermore, while both papers use a difference-in-difference method, the papers use different methodologies and control variables.

### 3.2 Relevance for Hungary

Many of the Polish SEZs are interregional and cover a large part of the country, as in Hungary, but the Polish SEZ are separated into 14 overall SEZ and grouped further into sub-regions *managed locally* and on *one common platform* (PAIH). The fact that the SEZs have one central platform in the PAIH as well as locally managed SEZs is different from the Hungarian case.

As with the other cases, the original zones (before 2018) were focused to designated areas covering a fixed number of hectares. With the new law from 2018, this has changed to be more like the Hungarian case, though except for covering the whole country. There are however still some quantitative and qualitative criteria that have to be upheld in Poland within the scope of the SEZs. The SEZ incentives seems to be somewhat similar to the Hungarian FEZ.

The economic impact of the Polish SEZ have been heavily analysed, which is something that also can be done in Hungary if the relevant data exists or is collected. Two main methodologies seem the most relevant for Hungary: the counterfactual difference-in-difference analysis proposed by Ambroziak & Hartwell (2018) and Jensen & Winiarczyk (2014), and the "cost-benefit type" analysis by Pastusiak et al (2018). The cost benefit analysis is similar to the one in Lithuania, except for including more factors and looking into the shadow price of public expenditures in SEZs.

It is difficult to say exactly what has worked well in the Polish SEZs, and whether this can be transferred to Hungary. Poland has some relatively simple demand incentives in place and relatively large regional offices that, to some extent, freely administer the zones in their SEZ region giving opportunities to focus on regional comparative advantages, and there still is one common platform to get more general information on the SEZs (PAIH). This is something that the Hungarian government can consider in their revision.

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<sup>97</sup> Jensen & Winiarczyk (2014)

<sup>98</sup> Ambroziak & Hartwell (2018) and Jensen & Winiarczyk (2014) both uses difference-in-difference estimators but find different effects on employment and unemployment.

<sup>99</sup> Ciżkowicz et. al (2015).



## 4 Other country specific impact assessments of SEZs

Assessing the economic impact of SEZs is important for the justification of the public funds invested in their establishment and the tax rebates offered to investors. Yet, little systematic research has been done on the performance of SEZ and few countries have established a systematic process for assessing their impact.<sup>100</sup> The evaluation of the economic impact of a SEZ should consider direct and indirect effects, its financial and fiscal sustainability as well as potential social and environmental effects over time.<sup>101</sup> Ideally, the impact should be estimated as the net effect by also taking into account that some of the positive effects within the SEZs may have materialised at the expense of the rest of the country. Such estimations can be difficult, and data is often limited.<sup>102</sup> The assessment of the SEZ impact is therefore mostly based on case studies and often focuses on the impact on certain indicators instead of presenting a comprehensive cost-benefit assessment.<sup>103</sup>

The most frequently used methods for assessing the impact are difference-in-differences estimations to compare companies within the SEZ to similar companies outside of it.<sup>104</sup> In order to overcome data scarcity and issues related to the comparability of data across countries, one study used nightlights data to estimate SEZ performance in general and the importance of specific incentives in particular.<sup>105</sup>

Rather than giving a comprehensive overview of general methods used in the impact assessment of SEZs, this chapter will, however, zoom in on two European SEZs: **The Canary Islands SEZ** and the recently established **SEZs in Southern Italy**. These zones are not entirely comparable to the Hungarian case and are therefore not included as separate case studies. Nevertheless, the zones offer interesting insights into the evaluation of zone performance that might be relevant for the Hungarian FEZ.

### 4.1 Country specific economic impact of SEZs

#### 4.1.1 The Canary Islands SEZ

Due to its isolated geographical location, the Canary Islands are allowed to implement a special economic and fiscal regime aimed at promoting the economic development of the Archipelago.<sup>106</sup> The Canary Islands Special Zone (ZEC) was established in 2000.<sup>107</sup> The business incentives in the ZEC consist of a lower

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<sup>100</sup> UNCTAD (2019), p. 177

<sup>101</sup> UNCTAD (2019), p. 178

<sup>102</sup> UNCTAD (2019), p. 177

<sup>103</sup> UNCTAD (2019), p. 177. See, for instance, Gokhan & Crittle (2008) for an overview of the impacts of different SEZs on various indicators.

<sup>104</sup> See, for example Ambroziak et al. (2018) from the Polish case study.

<sup>105</sup> See Wong & Buba (2017). The report focuses on emerging economies and applicability to the Hungarian case might therefore be limited. However, the use of comparable data across countries allows for a larger dataset to analyse both SEZ performance and the importance of specific incentives.

<sup>106</sup> The characteristics of the fiscal and economic regime in the Canary Islands are at [https://www.gobiernodecanarias.org/asuntoseuropeos/ref/informacion\\_general/](https://www.gobiernodecanarias.org/asuntoseuropeos/ref/informacion_general/)

<sup>107</sup> See Herrera (2011) and the Canary Islands SEZ leaflet, [https://canariaszec.com/wp-content/uploads/2018-ZEC\\_FOL-LETO-INGLES.pdf](https://canariaszec.com/wp-content/uploads/2018-ZEC_FOL-LETO-INGLES.pdf)

corporate income tax of 4% (Spain's standard corporate tax rate is 25%), an exemption from property transfer taxes and stamp duties as well as an exemption from dividend tax and capital gains taxes for subsidiaries located within the ZEC. Newly created entities or branches can make use of these incentives only if they make an investment of at least €50,000 and generate at least three jobs.<sup>108</sup> Furthermore, the business must be active in a pre-specified sub-sector.<sup>109</sup>

### Impact assessment

The economic impact of the ZEC is evaluated in a study<sup>110</sup> that focuses on the performance of companies that are active within the ZEC. The impact is measured mainly by comparing ZEC businesses to businesses in the rest of the Archipelago based on firm micro data. The main characteristics considered in the study are the **number of jobs** that the ZEC companies provide, the **turnover** of these companies, the **salaries** they pay and the **total investment** they realise – compared to the average company on the Archipelago.

The study finds that businesses within the ZEC employ more than **4,500 employees**; they have generated around **€1 billion of turnover** in 2015 and have paid more than **€135 million in wages** over the same year. These numbers account for 1.6%, 2.7% and 1.9%, respectively, of the total for all businesses established on the Canary Islands, with the number of companies within the ZEC only accounting for around 0.5% of the total. The study finds that the average company within the ZEC is larger,<sup>111</sup> more productive<sup>112</sup> and pays higher salaries, than the average company in the Canary Islands, using simple average comparisons.<sup>113</sup>

Apart from that, the study finds that ZEC businesses have **invested** around €35 million in 2016 which is four times higher than the average company on the Canary Islands and finds indications that ZEC companies seem to survive longer than their counterparts.

The study also compares the **efficiency of the public funds** invested in the ZEC with respect to job creation to two other types of public investments on the Canary Islands:

1. the European structural funds between 2000-2006
2. the so-called “Reserve for Investments in the Canary Islands” which provide a relief on corporate taxes for profits that are reserved for investments in the Canary Islands.<sup>114</sup>

The study concludes that per million euro of public investment, more jobs were created if it was invested in the ZEC, compared to other public investments.<sup>115</sup>

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<sup>108</sup> For some areas the minimum investment is €100,000 and the minimum number of created jobs is five.

<sup>109</sup> For the requirements and eligible sub-sectors see [https://canariaszec.com/wp-content/uploads/2018-ZEC\\_FOLLETO-INGLES.pdf](https://canariaszec.com/wp-content/uploads/2018-ZEC_FOLLETO-INGLES.pdf)

<sup>110</sup> Consorcio de la Zona Especial Canaria (2018). The study is commissioned by the ZEC consortium.

<sup>111</sup> The average ZEC firm has around 17 employees per company compared to five on average on the Canary Islands

<sup>112</sup> The average ZEC firm has around 67% higher production per employee compared to the Canary Island average

<sup>113</sup> The average ZEC firm pays around 16% higher wage compared to the Canary Island average

<sup>114</sup> The impact of the two other incentives is based on two separate studies, see Sosvilla et al. (2010) and Díaz et al. (2007).

<sup>115</sup> Between 2000-2006, the European structural funds provided around €680 million of public investment on the Canary Islands while creating close to 9000 jobs. The RIC scheme led to public investments of around €9 bn. between 1994-2007 and created around 147,000 jobs. Compared to that, the study estimates total public investment for the Canary Islands SEZ of around €82 million between 2012 and 2016 while more than 4,500 jobs were created in the ZEC. This leads to a

### 4.1.2 Southern Italy's SEZs

With the enacting of the “Decree of the South” in 2018, the Italian government started the establishment of SEZs in the eight regions of Southern Italy. The objective of the SEZs is to advance the economic development in the region and to close territorial gaps between Italy's South and the rest of the country.<sup>116</sup> So far, four SEZs have been established.

The business incentives in the SEZs consist of a tax credit for investments of 10%-25% for large, 15%-35% for medium and 20%-45% for small companies, depending on the region in which the company is established.<sup>117</sup> Businesses within the SEZ also benefit from simplified administrative procedures and reduced administrative charges. In order to be eligible for the benefits, companies must maintain their activity in the SEZ for at least seven years and cannot be in a state of liquidation. Moreover, the SEZs must be placed in a region with at least one port area, indicating an explicit objective of promoting exports (and imports of inputs).<sup>118</sup>

#### Impact assessment

The SEZs in Southern Italy have only been established recently. A comprehensive *ex post* assessment of the impact of the SEZs is therefore not available. However, Italian regions have submitted a so-called *Strategic Development Plan* in the application to be granted an SEZ status. This document contains an analysis of the expected impact from the establishment of each SEZ. While being an *ex-ante* estimate, it provides information on the methodology used for the estimation of the impact and on the indicators that are considered relevant.

The impact estimations differ between the four established SEZs, but several indicators for assessing the impact are considered in most of the zones: the impact on **exports, employment, foreign investment, technology transfers, productivity of the local economy** and the impact on **government revenues**. The most detailed description of the methodology for the impact estimation is provided in the strategic plan of the SEZ Calabria.<sup>119</sup> For the impact estimation, the authors used a set of economic models to estimate the expected direct, indirect and induced impact on employment<sup>120</sup>, the impact on exports, and the impact on the economic ties between different regions connected within the SEZ.<sup>121</sup> The authors also provide an estimate of the cost of establishing the SEZ for the regional government.

To estimate the impact on employment and exports of the Calabrian SEZ, the authors simulate the development of exports by industrial businesses as well as the number of employees they employ over a time horizon of 10 years (2018-2028). The estimates suggest that, over a ten-year period, exports will **more than**

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job creation per million of invested public funds of 13, 16 and 55, respectively, making the ZEC the most cost-effective use of funds for job creation.

<sup>116</sup> See SRM (2017), p. 9

<sup>117</sup> This tax credit is granted up to a maximum investment value of € 50 million.

<sup>118</sup> Regions without port zones can still be included in an “interregional SEZ” together with a region that has a port area.

<sup>119</sup> See Chapter 7 of the strategic plan, available at <https://www.agenziacoessione.gov.it/wp-content/uploads/2019/09/Pi-ano-Strategico-Calabria.pdf>

<sup>120</sup> The direct impact is based on the impact of SEZ on employment from previous estimates; the indirect and induced employment effects are estimated within an input-output model.

<sup>121</sup> The authors use a gravity model for these estimations.

**triple** for companies located within the SEZ, whereas they will increase only marginally for companies outside the SEZ or if the SEZ is not established at all.

The authors estimate that an *additional 16,000 jobs* (direct, indirect and induced) will be created by the SEZ, close to seven times more than without it.

## 4.2 Relevance for Hungary

The Canary Islands SEZ is a special case in that, due to its remoteness, the entire Archipelago is eligible for the ZEC benefits and has received special treatment for many years (it is classified as an Outermost Region of the EU).<sup>122</sup> This does not mean that the methodology for assessing the SEZ cannot be used in the Hungarian context, it only means that an inference between incentives and/or territorial coverage to the Hungarian case is not straightforward and must be done with caution.

The method for the impact assessment of the Canary Islands SEZ can be replicated in Hungary if the relevant data exists, such as firm micro data on exports, employment, foreign investment, etc. for firms using the FEZ incentives and firms that do not. The Canary Island's analysis provides simple information on interesting metrics for the impact of a SEZ relative to the average firm in terms of **number of jobs, money invested, productivity**, and an evaluation of the **effectiveness of the public funds**. For Hungary, the evaluation should be made between firms that are part of the SEZ program relative to firms that are not.

However, a simple comparison does not take into account that businesses eligible for the SEZ benefits might be inherently different from those that are not eligible.<sup>123</sup> That means that the available study on the impact of the ZEC is not able to fully isolate the impact the ZEC has on the companies. Ideally, an econometric model that allows to control for the inherent differences between companies should be set up in order to estimate the true impact of the ZEC benefits, e.g. as suggested in the other case studies.

The methodologies used for the ex-ante estimation of the impacts in Italy could be applied for analyses of changes to the Hungarian FEZ to assess the ex-ante implications of the proposed changes. The impact estimations conducted for the Italian SEZs can be useful to identify important indicators for evaluating the impact of the Hungarian FEZs, and/or as a tool to assess and compare various options for revising the Hungarian FEZs.

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<sup>122</sup> See for example [https://ec.europa.eu/regional\\_policy/en/policy/themes/outermost-regions/](https://ec.europa.eu/regional_policy/en/policy/themes/outermost-regions/)

<sup>123</sup> The requirements for obtaining the ZEC benefits in the Canary Islands exclude certain companies by default. See in the appendix for a more detailed discussion of this.

## 5 Suggestions for the Hungarian FEZ scheme revision

We have examined four case studies of European SEZs, focusing on factors that serve as useful input to the ongoing revision of the Hungarian FEZs. However, a one-to-one application of the case studies to the Hungarian context is not straightforward, since there are relevant factors impacting the functioning of an SEZ that are inherently different between Hungary and the case study countries. For example, unlike Latvia, Lithuania and Poland, Hungary is landlocked and therefore less attractive for investors that prefer closer access to the sea. Furthermore, Hungary is not located next to a large economy: Poland borders Germany and Latvia borders Russia. Thus, a replication of the case studies' SEZ structures may not yield the same results in Hungary.

However, the observed impacts in the case study SEZs offer several useful insights that are useful for Hungary to consider when revising its FEZs. It is likely beneficial to explore the possibilities for adapting the Hungarian FEZs into something that is at least similar to the successful case study SEZs. With that said, one cannot expect the same economic impacts from a one-to-one adoption of the SEZ structures of other countries, if they are implemented in Hungary.

The observed economic impacts of the case studies suggest that especially Lithuania and Poland have achieved positive economic impacts of their SEZs. However, the literature does not specifically conclude which incentives, governance structures, territorial coverages etc. that are the most effective. Furthermore, many studies do not consider counterfactuals, and instead analyse impacts using cost-benefit analyses, correlations or simple comparisons, and one should therefore be careful when interpreting the results.

With that said, we highlight the following suggestions for possible actions for the Hungarian government in their revision of the FEZ scheme to provide better support for the least-developed regions in Hungary, based on the current differences between the Hungarian FEZs and the case study SEZs.

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### SUGGESTION

#### Change of territorial coverage and organisation

The Hungarian government can consider a similar territorial coverage as Poland, Lithuania and Latvia, and group their municipalities in a relatively low number of locally administered SEZs. Furthermore, the government can consider having one central administration such as PAIH in Poland. These changes make analysis on where to investment more concrete for investors, as they can easily navigate through the different possibilities via a single point of contact. This setup also allows for a better promotion of regional comparative advantages. For example, such advantages could be low-cost labour, close cooperation with universities, proximity to the Austrian border etc. All SEZs of the case studies have different territorial coverage than the Hungarian FEZs. They have dedicated plots for SEZ activity and a limited number of locally administrated SEZs: five in Latvia, seven in Lithuania, and 14 in Poland. Poland also has many sub-SEZs administered under the SEZs.

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**SUGGESTION****Blended governance**

The Hungarian government can consider a blended governance structure as in Lithuania, where the government outsources the administration of the FEZs to a private zone management company but keeps the financial incentives state governed. It is not possible to say that this is the reason for why the Lithuanian FEZs have performed relatively well, but there are observed positive economic impacts in the Lithuanian FEZs. It should be noted that there are both positive and negative consequences of the blended governance structure. The private governance structure may offer faster and more flexible solutions for investors but could (potentially) also be more expensive for the investors.

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**SUGGESTION****Differentiated incentives in different regions**

The Hungarian government can consider adopting the differentiated support as in Poland, e.g. depending on differences in the unemployment rates in the FEZ areas. In general, the incentives in Hungary, Latvia, Lithuania, and Poland are focused on rebates for corporate and property tax from investment costs, and for some countries also dividend and personal income tax in the SEZs. The incentives differ in size and percentages, and Poland has variations in the aid between different regions. This allows the least-developed regions to offer more and/or larger incentives to investors, as one potential comparative advantage.

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**SUGGESTION****Conducting ex-ante economic assessments**

The Hungarian government can consider conducting an ex ante economic assessment of their planned FEZ changes, for example using simulations as done in Southern Italy. If conducted properly, this exercise may guide the Hungarian government to assess advantages and disadvantages of various models in order to select the most optimal solution. This would likely require more advanced models than in the Italian case, taking into account regional differences in Hungary,

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ESPON EGTC

4 rue Erasme, L-1468 Luxembourg

Grand Duchy of Luxembourg

Phone: +352 20 600 280

Email: [info@espon.eu](mailto:info@espon.eu)

[www.espon.eu](http://www.espon.eu)

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