

Special Economic Zones (SEZs) Impact on Poverty in Indonesia

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Abstract

Special Economic Zones (SEZs) have been implemented in Indonesia to promote economic development and attract foreign investment. In economic literature, there is still debate, as the available literature still needs to provide a clear conclusion on how place-based policies such as SEZs can affect well-being. The synthetic control method is employed in this study to examine the impact of SEZs on poverty rates at both the district and city levels using data from 2005 to 2021. By delving into the relationship between SEZs and poverty, this study seeks to shed light on the effectiveness of SEZs in addressing poverty in local communities. It compares it with the counterfactual district/city, a synthetic of districts/cities that do not have SEZs in their region. The results of this study found that of the eight districts/cities that have SEZs, the existence of SEZs has a varying impact on poverty levels, with an increase in poverty in four districts/cities and a decrease in poverty in the other four districts/cities, the study also reveals the complexity of the social impacts of place-based policies like SEZs.

Keywords: poverty; Special Economic Zones; synthetic control.

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1. Introduction

Special Economic Zones (SEZs) are geographically delimited areas where the government facilitates industrial activities through intensive fiscal and infrastructure support (UNCTAD, 2019). Relaxed regulations, tax incentives, and infrastructure development often characterise these zones. SEZs are one form of place-based policy. Neumark and Simpson (2015), in the *Handbook of Regional and Urban Economics*, state that place-based policies typically denote the actions taken by the government to enhance the economic performance of a specific area under its jurisdiction., creating more job opportunities and providing higher wages. Generally, according to Neumark and Simpson (2015), the target of place-based policies is an area with poor performance, such as an area that is relatively less fortunate in obtaining regional development assistance. SEZs policies are also an effort to create agglomeration in an area. One of the critical factors in economic development is the concentration of various business activities (Iqbal et al., 2020). Economic agglomeration can significantly impact household well-being and poverty reduction (Giang et al., 2016).

The development of SEZs has proven to have positive effects on both regional and national economies (Aggarwal & Kokko, 2021; Brussevich, 2020; S. A. Frick et al., 2019; Wang, 2013) by encouraging the influx of foreign investment (Song et al., 2020; Wang, 2013), increasing the average expenditure consumption (Aggarwal & Kokko, 2021; Picarelli, 2016), to result in increasing the local economic growth (Lu et al., 2019; Wang, 2013; Widianto & Yudhistira, 2021). SEZs are an instrument that drives investment, generates exports, creates jobs, and makes the regional economy more dynamic (S. Frick & Rodríguez-Pose, 2019). Generally, SEZs policies in some countries depend on the policies and leadership style of the political regime in government (Mukherjee et al., 2016). Specifically, SEZ policies in some countries aim to attract foreign investment by providing facilities and incentives in their policies, creating jobs, and improving economic growth (Aggarwal, 2012; Alkon, 2018; Wang, 2013). Countries in Europe set SEZs development policies in locations close to large cities or industrial cities with considerations of accessibility and infrastructure (OECD, 2017), while in neighbouring countries Malaysia and Thailand, with well-planned and easy access to resources, SEZs policies have proven able to attract investors (Cipta, 2017; Wahyuni et al., 2013).

Within Indonesia, Rothenberg and Temenggung (2019) state that place-based policies have long played an important role in Indonesia, providing equal opportunities for people in all regions of the country. The policy for developing SEZs is outlined in the 2005-2025 National Medium-Term Development Plan (RPJMN) to achieve economic growth and equality nationally. Although high economic growth is often considered an indicator of a country's economic development success, it is also essential to consider other crucial factors. These include fair distribution of income, balanced investment opportunities, availability of employment, and low levels of poverty (Nuraini & Hariyani, 2019). The government has always made poverty, the primary source of substantial inequality, a crucial priority in its policies. To combat poverty, the government has utilised diverse economic, social, and political approaches (Meydianawathi & Setyari, 2018). The government initiates the development of SEZs in Indonesia. It aims to accelerate regional development, create job opportunities, and boost economic growth through various sectors such as industry, trade, and tourism.

Whether SEZ development in Indonesia has improved the local population's well-being is debatable. One way to measure the well-being of a population is through poverty rates. If poverty levels decrease in an area, it may be inferred that the local population is experiencing an improvement in their level of prosperity. However, there is still debate in economic literature regarding the social and economic impacts of place-based policies. Some literature, such as Neumark and Simpson (2015), does not guarantee the success of a policy despite its intention to help the poor local population. Even though place-based policies such as SEZs can create jobs (Aggarwal & Kokko, 2021; S. Frick & Rodríguez-Pose, 2019), certain groups may still be left behind. Reynolds and Rohlin (2015) found that place-based industrial policies increase inequality because skilled labour migrates to the areas where the policy is implemented, thus supporting this view. This influx of skilled workers can worsen the opportunities for local unskilled workers to benefit from the policy.

Moreover, the arrival of new inhabitants can lead to a rise in living expenses, such as the cost of housing. Furthermore, there are other channels through which SEZs may negatively impact residents. The shift from the agricultural to the industrial sector led to differing labour incomes between the two sectors, which ultimately contributed to poverty (Sumargo & Haida, 2020), such as land acquisition for industrial purposes, which can lead to a reduction in land availability for agriculture and loss of livelihoods for local farmers. As a result, SEZ development can increase poverty and inequality in the area (Aggarwal & Kokko, 2021; Le et al., 2020).

Additionally, concerning the development and expansion of SEZs, the "resource curse" can occur if the government does not ensure that the profits generated from natural resources are invested relatively in the economic and social development of the area. The resource curse describes the phenomenon where regions abundant in natural resources often fail to develop their economy and reduce poverty quickly and may even see the opposite occur. Natural resources often become the government's primary income source, thus diverting the government's attention from developing other sectors that could improve the population's well-being (Loayza et al., 2013; Obeng-Odoom, 2012; Wibowo & Parmansyah, 2018).

This study aims to address the following question based on the above: Can SEZs development in districts/cities lead to a decrease in poverty compared to districts/cities in comparison to districts/cities without SEZs? We aim to investigate the impact of SEZs on poverty rates in districts/cities in Indonesia where SEZs have been established. Previous research related to SEZs primarily only focuses on one region. This research examines the impact of SEZs in all regions of Indonesia. It compares districts/cities with SEZs to those without SEZs within each province.

Moreover, research on the impact of SEZs in Indonesia is minimal and mainly conducted qualitatively, while quantitative research still needs to be completed. This research uses the synthetic control method, rarely used in Indonesia. This method is used to overcome counterfactual issues often encountered when only involving one treatment unit and several control units. Hopefully, this research will provide additional empirical literature on the impact of SEZs in Indonesia using the synthetic control method. We expect this research to provide policymakers with input in evaluating the implemented SEZs policy and formulating future SEZs policies in Indonesia.

2. Literature Review

2.1. Agglomeration

The Special Economic Zone (SEZ) is a government initiative to create an economic agglomeration. According to Rosenthal and Strange (2004), the scope of economic agglomeration includes industrial, temporal, geographic, and competitiveness dimensions. In the industrial dimension, Rosenthal and Strange (2004) emphasise the importance of economic localization and urbanisation, deriving the micro foundation concept of agglomeration originating from localization from Marshall's theory. Marshall (1920) states that agglomeration generates a "neighbourhood effect of the localization of industry," thereby reducing production costs. Marshall (1920) shows that economic agglomeration increases economies of scale as a spillover effect from location factors influenced by knowledge spillovers, reduced labour costs, lower input prices, and increased competition. The geographic dimension (Rosenthal & Strange, 2004) reveals significant findings in the agglomeration literature, such as the relationship between job density and labour productivity (Ciccone, 1998) and the weakening of agglomeration effects as they cross geographical space (Rosenthal & Strange, 2003).

Meanwhile, Kathuria (2016) generally states that agglomeration occurs if adequate infrastructure and labour markets support it. Agglomerated economies benefit from population concentration, business activities, and many companies close to each other (Richardson, 1995). In the economic geography literature, agglomerated economies are also called urbanised economies (Duranton & Puga, 2004; Henderson, 2003).

2.2. Place-Based Policy

Neumark and Simpson (2015) state that, generally, place-based policies target areas with poor performance, such as regions that are relatively less fortunate in receiving regional development assistance. Additionally, place-based policies further enhance the economic performance of well-performing regions. Ladd (1994) distinguished a subset of place-based policies or strategies as geographically targeted policies with the intention and structure of assisting disadvantaged residents within them, such as enterprise zone programs that seek to create jobs in or near areas where low-income people live. In contrast, some place-based policies target areas regardless of whether there are disadvantaged people or even many people in those areas.

2.3. SEZs and Poverty

A solution to increase economic growth and create new job opportunities is using the "trickle-down effect" theory to explain how SEZs can help reduce poverty. The theory suggests that by increasing investment and economic growth in specific regions, prosperity will trickle down and improve the economic conditions of the local community (Toussaint, 2020). Experts anticipate that SEZs will produce advantages that will ultimately benefit all segments of society, including those experiencing poverty. Furthermore, the literature suggests that SEZs can impact poverty through various channels. These channels include creating new employment opportunities, developing new skills, and increasing income, all of which can contribute to reducing poverty. SEZ development, as a form of agglomeration, is expected to contribute to the welfare of poor communities by providing new job opportunities. Agglomeration economies can have positive and negative effects on the socioeconomic variables of both developed and developing countries and can positively impact poverty by creating job opportunities and high wages (Iqbal et al., 2020).

The existence of SEZs can attract both local and foreign investments in the region. SEZ investment is an addition to aggregate investment (Aggarwal, 2010; Song et al., 2020). The development of SEZs is expected to create high-value-added activities and create demand for skilled labour. With the influx of investment, increased demand for inputs, new infrastructure, and other activities is expected to create new job opportunities. The new jobs created by SEZs will absorb much labour, thus improving living standards and reducing poverty by providing additional income to the community.

Furthermore, SEZs, as an agglomeration, will create a competitive environment among business players within them. This competitive environment will stimulate learning and innovation within the SEZs. Through on-the-job training and the "learning by doing" process, it is hoped that skills and productivity will improve, ultimately improving the welfare of unskilled workers who are poor by increasing job opportunities and especially their income (Aggarwal & Kokko, 2021). The formation of new skills is wider than companies within SEZs only, as the labour movement from SEZs to non-SEZ areas can transfer skills throughout the economy (Aggarwal, 2007). Additionally, there is a possibility that the demand for new skills in SEZs contributes to knowledge transfer by increasing local education and training systems to adapt to investor needs in SEZs (Aggarwal, 2012). Improving skills and knowledge transfer will, in turn, increase productivity and income for workers within and outside the SEZ areas (Lu et al., 2019; Wang, 2013).

3. Methods

We use the Synthetic control method (SCM) to examine the impact of SEZs on poverty. SCM is an approach pioneered by Abadie and Gardeazabal (2003) that uses a systematic comparison, and it is a statistical method developed for comparative case studies. Abadie and Gardeazabal (2003) utilised SCM to investigate how terrorism affected economic growth in the Basque Country. Then the method was further developed with inferential statistical techniques by Abadie et al. (2010) to estimate the impact of tobacco control policies in California. SCM is used in a condition where some units are affected by a policy or event while similar units are not. The development of units affected by the policy or event is then compared to the development of units unaffected to conclude the impact of the event or policy. SCM will optimally choose a set of weights that will produce the optimal counterfactual estimates for the units receiving treatment when applied to the appropriate units. A Counterfactual is a "synthetic unit" that describes what would happen to the aggregate unit receiving treatment if the treatment had not occurred (Cunningham, 2018). The characteristics of SCM include identifying the impact of a policy or event at the district/city, provincial, or national level. In addition, the method can create a control group with characteristics similar to the treatment group using statistical models. In summary, the method used in the research is SCM to measure the impact of SEZs on poverty by comparing the poverty level in municipalities that have SEZs with that of municipalities that do not.

To measure the impact of SEZs on poverty, the SCM will use a counterfactual of the districts or cities with SEZs in their region. Based on Abadie et al. (2010), the districts or cities being observed ($J+1$) in period T . Then, the districts/cities considered as the treatment or with SEZs are assumed to be only the first unit (1). In the counterfactual framework, an estimation is made:

$$Y_{jt} = Y_{jt}^N + \alpha_{jt}D_{jt} \tag{1}$$

Y_{jt} represents the poverty level in municipality j at time t , and Y_{jt}^N represents the hypothetical poverty level that would be observed in municipality j at time t if SEZs were not present. D_{jt} is a dummy variable that takes the value of 1 if SEZs are present in municipality j at time t and 0 otherwise. α_{jt} represents the causal impact of SEZs on municipality j ($j=1$) at time t , which is the difference in poverty levels between municipalities with SEZ and those without SEZ.

Next, the estimation of the impact of the existence of SEZs in districts/cities ($j=1$)

$$\alpha_{1t} = Y_{1t}^I - Y_{1t}^N = Y_{1t} - Y_{1t}^N \tag{2}$$

to calculate α_{1t} , it is only necessary to estimate the poverty level of districts/cities without the SEZ policy in the region, Y_{1t}^N , because the poverty level with the policy intervention Y_{1t}^I is equal to the poverty level of the district/city with SEZ.

$$Y_{1t}^N = \delta_t + \theta_t Z_i + \lambda_t \mu_i + \varepsilon_{it} \tag{3}$$

δ_t is a constant factor across all units, θ_t is a vector related to the parameters, Z_i is a vector of covariates from relevant observations (unaffected by intervention), λ_t is a vector of unknown general parameters, μ_i is an unknown factor, and ε_{it} is an unobserved error with an average value of 0.

Next, let us assume a weight vector $W = (w_2, \dots, w_{j+1})$, where j represents the districts/cities in the donor pool, where the value of each weight is equal to or greater than 0 in each donor district/city ($w_j \geq 0$) and the sum of all weights is 1 ($w_2 + w_3 + \dots + w_{j+1} = 1$). Then, each specific value of the vector W will represent a potential synthetic control, a weighted average of districts without SEZs that will serve as the control unit. The vector of weights $W^* = (w_2^*, \dots, w_{j+1}^*)$ minimises the difference in characteristics before the policy intervention $X_1 - X_0W$ between the poverty level of districts with SEZs ($(k \times 1)$ vector X_1) and its synthetic control ($(k = j)$ matrix X_0). Therefore, the weighted average of the districts that become the control is:

$$\sum_{j=2}^{J+1} w_j^* Y_{jt} = \delta_t + \theta_t \sum_{j=2}^{J+1} w_j^* Z_j + \lambda_t \sum_{j=2}^{J+1} w_j^* \mu_j + w_j^* \varepsilon_{it} \tag{4}$$

The impact of SEZs on equation (2), α_{1t} , can be estimated using the synthetic control unit in equation (4). Therefore, the estimate of the impact of the presence of SEZs is as follows:

$$\alpha_{1t} = Y_{1t} - \sum_{j=2}^{J+1} w_j^* Y_{jt} \tag{5}$$

Then, to test the significance of the estimated impact, Abadie et al. (2010) suggest conducting a placebo test, which assumes that every control unit experiences a similar treatment. Furthermore, Abadie et al. (2015) suggest calculating the ratio of RMSPE (root mean square prediction error) before and after treatment to gather information for inference. The treatment can impact when the RMSPE after treatment is greater than the RMSPE before.

In addition to using SCM, as referred by Widiyanto and Yudhistira (2021) and Ilmma (2017), this research also utilises the double difference method in calculating the impact of the presence of SEZs on poverty in each district/city.

$$\Delta pov = (pov_{T,1} - pov_{C,1}) - (pov_{T,0} - pov_{C,0}) \quad (6)$$

Where $pov_{T,1}$ is the average poverty rate of treated districts/cities after the SEZ begins operations, $pov_{C,1}$ is the average poverty rate of control district/cities after the SEZ begins operation, $pov_{T,0}$ is the average poverty rate of treated district/cities before the SEZ begins operations, and $pov_{C,0}$ is the average poverty rate of control districts/cities before the SEZ begins operations.

In order to determine the impact of SEZs on poverty, this study identifies two main variables: poverty and the status of the presence of SEZs. Poverty, the main dependent variable, is the percentage of the population with per capita consumption below the poverty line at the district/city level. The independent variable is the status of the presence of SEZs. Then, to determine the influence of SEZs policy, it is necessary to identify whether a district or city has SEZs. In addition to using data from official documents, this study uses the most common approach in similar research. By comparing the boundaries of SEZs and the districts/cities, the locations of the districts/cities where each SEZ is located can be confirmed. Because SEZs are the most geographically divided unit in the data, SEZs may be located within a district or city or at the intersection of several districts or cities. Therefore, if a district or city has at least one SEZ, it will be identified as one with SEZs and considered a treatment group. Conversely, districts or cities without SEZs are considered the control group.

Next, to form a synthetic control, in observations, Abadie et al. (2010) recommend using control variables with a high level of prediction for their outcome. This study uses several control variables, including district/city characteristics such as fiscal data, infrastructure, education level, and labour participation rate. Collecting relevant data to measure the impact of SEZs on poverty is crucial. This study uses secondary data obtained from several sources. Data on poverty rates, education levels (measured as the average years of schooling), and labour force participation at the district/city level collected from the Indonesian Central Bureau of Statistics from 2005 to 2021. Fiscal data, including government revenues and expenditures, were obtained from the Ministry of Finance. Data on the presence of SEZs was obtained from the National SEZs Council and included each SEZs name, type, year of establishment, area, and industries.

Subsequently, before conducting an estimation, in order to determine the counterfactual at the district/city level. From 504 districts/cities, this research omitted districts/cities with industrial areas in their region and left out districts/cities for which data was either unavailable or missing. Therefore, of the 12 districts/cities with SEZ, eight districts/cities have SEZ in their region that will be analysed, and 323 districts/cities can be included as a donor pool control to create a synthetic control in the data period used. This research uses data from 17 years, from 2005 to 2021, resulting in 5491 sample observations.

4. Results, Analysis, and Discussions

This study creates panel data at the district/city level to obtain comparative data between districts/cities with SEZs and those without to estimate the impact of SEZs on poverty. Then, when selecting the counterfactual, to reduce potential biases that may arise if donor units have outcomes that are significantly different from treatment units, it is recommended that donor districts/cities be chosen from similar regions or areas with similar outcome characteristics to the treatment area (Abadie et al., 2010, 2015; McClelland & Mucciolo, 2022). Therefore, this research will create eight synthetic districts/cities, with each synthetic district/city corresponding to each of the eight districts/cities with SEZs, namely Lombok Tengah District, Bintan District, Pandeglang District, Simalungun District, Kutai Timur District, Sorong District, Lhokseumawe City, and Palu City.

Based on the SCM estimation, Table 1 lists combinations of districts/cities that form a synthetic group from districts/cities with SEZ and their respective weight.

Table 1. The combination of Districts/Cities Selected as Synthetic Control

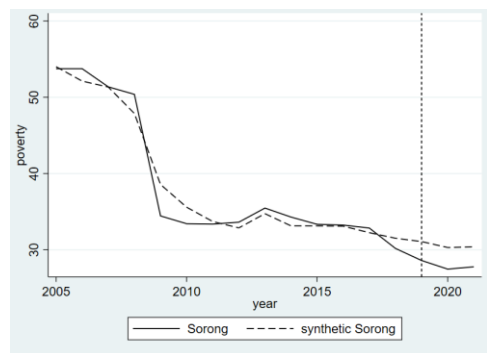
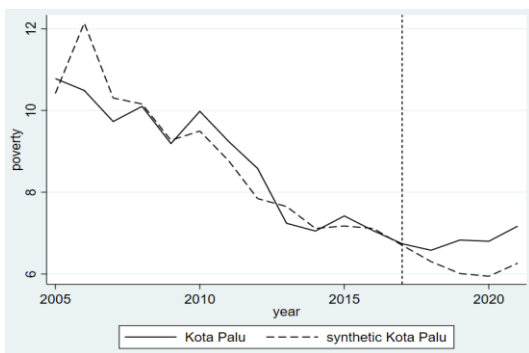
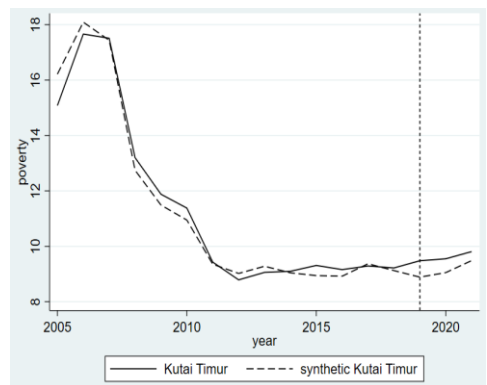
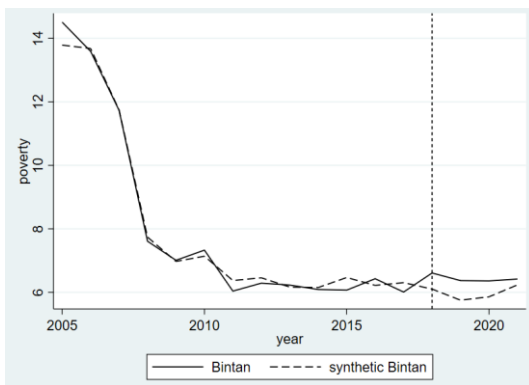
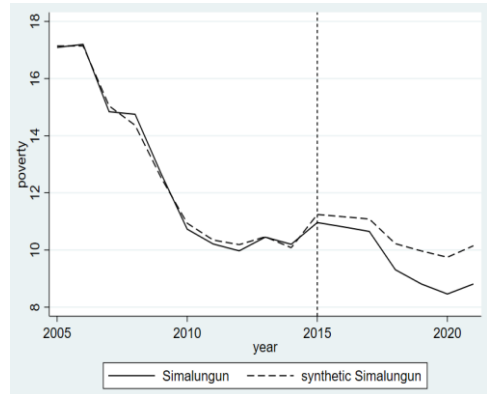
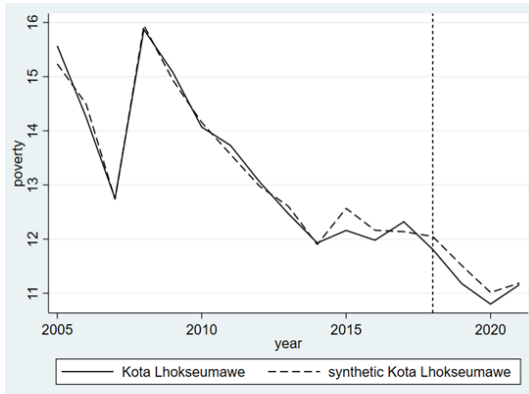
| District /City | Lhokseumawe | Simalungun | Bintan | Pandeglang | Lombok Tengah | Kutai Timur | Palu | Sorong |
|----------------------|-------------|------------|--------|------------|---------------|-------------|--------|--------|
| | Weight | Weight | Weight | Weight | Weight | Weight | Weight | Weight |
| Aceh | | | | | | | | |
| Tenggara | 0,128 | | | | | | | |
| Langsa | 0,097 | | | | | | | |
| Sabang | 0,124 | | | | | | | |
| Dairi | | | 0,301 | | | | | |
| Langkat | | 0,578 | | | | | | |
| Sibolga | | 0,07 | | | | | | |
| Tanjung Balai | 0,466 | | | | | | | |
| Tebing Tinggi | | 0,117 | | | | | | |
| Kuantan Singingi | | 0,032 | | | | | | |
| Kota Sawahlunto | 0,185 | | | | | | | |
| Sarolangun | | | 0,144 | | | | | |
| Tanjung Jabung Timur | | 0,112 | | | | | | |
| Bangka Barat | | 0,091 | 0,135 | | | | | |
| Natuna | | | 0,42 | | | | | |
| Garut | | | | 0,007 | | | | |
| Tasikmalaya | | | | 0,036 | | | | |

| District /City | Lhokseumawe | Simalungun | Bintan | Pandeglang | Lombok Tengah | Kutai Timur | Palu | Sorong |
|---------------------|-------------|------------|--------|------------|---------------|-------------|--------|--------|
| | Weight | Weight | Weight | Weight | Weight | Weight | Weight | Weight |
| Tegal | | | | 0,057 | | | | |
| Lumajang | | | | 0,109 | | | | |
| Jember | | | | 0,022 | | | | |
| Kediri | | | | 0,032 | | | | |
| Lebak | | | | 0,736 | | | | |
| Karang Asem | | | | | 0,095 | | | |
| Buleleng | | | | | 0,06 | | | |
| Sumbawa | | | | | 0,168 | | | |
| Dompu | | | | | 0,238 | | | |
| Bima | | | | | 0,17 | | | |
| Sumba Barat | | | | | 0,096 | | | |
| Manggarai Barat | | | | | 0,174 | | | |
| Landak | | | | | | 0,016 | | |
| Melawi | | | | | | 0,097 | | |
| Hulu Sungai Selatan | | | | | | 0,051 | | |
| Paser | | | | | | 0,541 | | |
| Penajam Paser Utara | | | | | | 0,114 | | |
| Bulungan | | | | | | 0,181 | | |
| Parigi | | | | | | | | |
| Moutong | | | | | | | 0,064 | |
| Parepare | | | | | | | 0,152 | |
| Soppeng | | | | | | | 0,044 | |
| Palopo | | | | | | | 0,185 | |
| Kendari | | | | | | | 0,555 | |
| Raja Ampat | | | | | | | | 0,34 |
| Jayawijaya | | | | | | | | 0,66 |

Source: Processed by Author, 2022

The SCM will search for and create a combination of districts/cities from each donor pool to obtain a statistically similar combination of districts/cities with characteristics

similar to those with SEZs. For example, six districts/cities form the synthetic Simalungun District, namely Langkat District, Sibolga City, Sawahlunto City, Tanjung Jabung Barat District, and Natuna District, each with different weights, where the total weight of the six selected districts/cities is 1. Next, the average poverty rate predictor variables in districts/cities with SEZs and their synthetic counterparts before SEZs operate in the



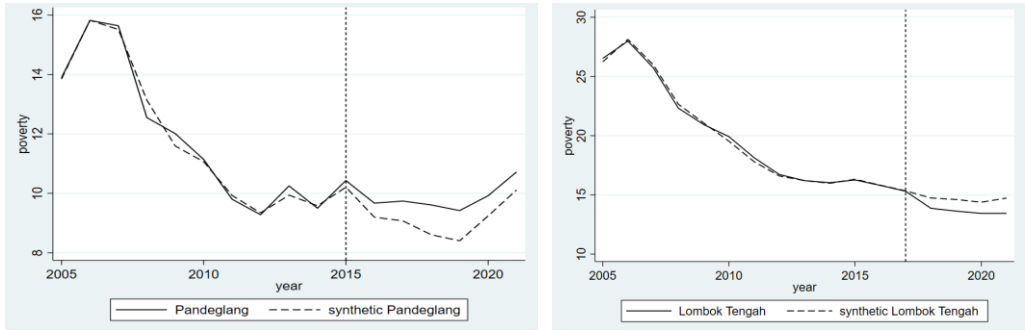


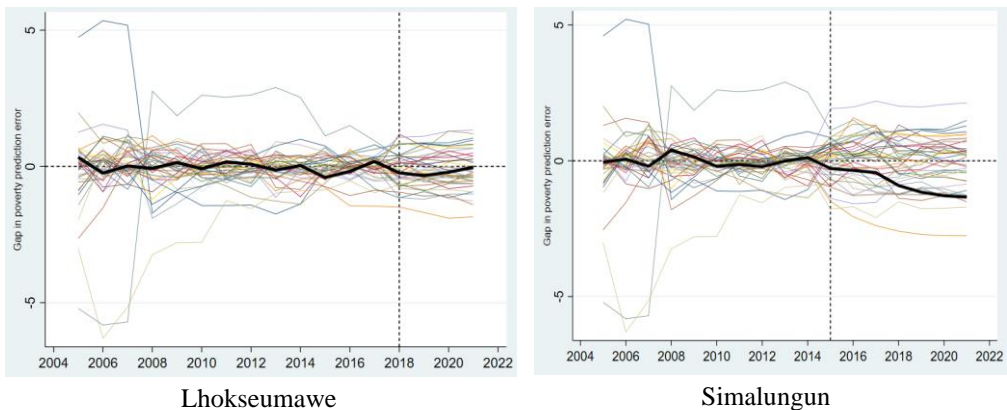
Figure 1. Comparison of Poverty Rates Between Districts/Cities with SEZs and their Synthetic Counterparts

Source: Data processed, 2023

The solid black line represents the comparison of poverty levels on the Y-axis between districts/cities with SEZs, while the dashed line represents their synthetic control districts/cities. The vertical dashed line indicates the year when the SEZs began operating. When using SCM, it is essential to look at how closely the outcome paths of the synthetic control match in the pre-treatment period. The graph shows that comparing poverty-level outcomes before treatment between Palu and its synthetic control must be adequate. According to Abadie et al. (2015), the SCM should only be used if the proximity of outcome paths in the pre-treatment period is sufficient.

Furthermore, after the SEZs were implemented, both Simalungun and Lombok Tengah districts had a similar declining trend with their synthetic control. The Simalungun district shows a more significant decrease in poverty than its synthetic control. A similar pattern is observable in the Lombok Tengah district.

Next, this study conducted placebo tests on each district/city in the donor pool to test significance. Figure 2 shows the results of the placebo test.



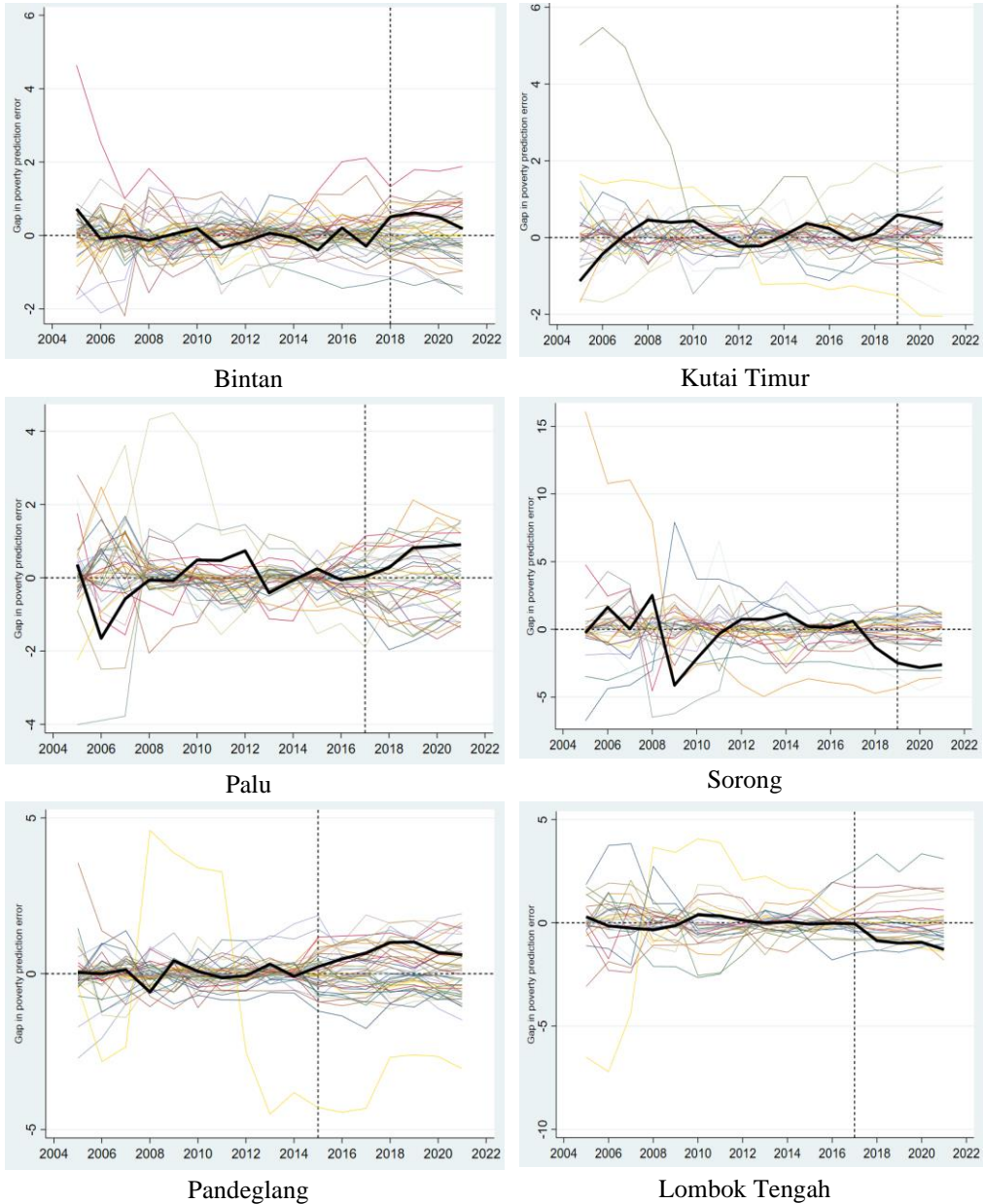


Figure 2. Districts/Cities Placebo Analysis

Source: Data processed, 2023

The colour-coded line plot shows the effect of the placebo variable, the poverty level of the district/city, which serves as the control. Meanwhile, the black line shows the effect of SEZs on the poverty level in each district/city that has SEZs. A dashed vertical line denotes the year the district/city received the treatment.

Then, the SCM calculates RMSPE from each placebo before and after treatment to calculate the p-value. In sequence, the p-value for Lhokseumawe is 0.454, Simalungun is 0.016, Bintan is 0.270, Kutai Timur is 15.677, and Palu is 15.316, Sorong is 0.096, Pandeglang is 0.208, and for Lombok Tengah is 0.046. Based on these results, the presence

of the SEZs significantly affects Simalungun, Sorong, and Lombok Tengah districts. Next, based on the results of impact estimation using the double difference method, the difference in poverty levels between districts/cities with SEZs compared to their synthetic districts/cities before and after the SEZs began operating can be shown in Table 2.

Table 2. The Impact of the Existence of SEZ on Districts/City Poverty Rates (percent)

| Districts/Cities | Impact (%) |
|--------------------|------------|
| Kota Lhokseumawe | -1,731 |
| Kab. Simalungun | -2,426 |
| Kab. Bintan | 0,924 |
| Kab. Kutai Timur | 1,231 |
| Kota Palu | 0,854 |
| Kab. Sorong | -1,541 |
| Kab. Pandeglang | 1,143 |
| Kab. Lombok Tengah | -1,559 |

Source: Processed by Author, 2022

The impact of SEZs on poverty rates varies across districts/cities, where poverty increases in 4 districts/cities and decreases in 4 other districts/cities with a range of -2.426 to 1.231 percent. The increase in poverty occurred in Bintan, Kutai Timur, Palu, and Pandeglang districts. These results align with previous studies that stated that SEZs increase poverty and inequality (Aggarwal & Kokko, 2021; Le et al., 2020). However, further analysis is needed to understand what factors caused poverty to increase. A possible explanation for the increase in poverty in Palu City and Pandeglang District is the natural disaster of an earthquake and tsunami in Palu City and the tsunami disaster that occurred at the Tanjung Lesung SEZs in Pandeglang district, and both happened in 2018. In addition, according to the 2021 National SEZs Council Report, it was stated that the Tanjung Lesung SEZs Pandeglang is one of the SEZs that still needs to be optimally performing.

Multiple factors explain why the SEZs' existence has not resulted in a positive outcome. An imbalance in resource management among stakeholders, namely the government, private sector, and communities, creates a need for collaborative governance, which is one of the reasons why the presence of SEZs has yet to have a positive impact. (Trisniati et al., 2022). From the government's side, the Coordinating Ministry for Economic Affairs stated that many overlapping government regulations, primarily related to investment, make investors and potential investors hesitant to invest in SEZs (Rika, 2019). The case of SEZs Kutai Timur reflects that there were no realised investments according to the National SEZs Board Report in 2020 and 2021, which resulted in a need for further improvement in the built infrastructure. Additionally, the government still needs to utilise the potential of businesses in the surrounding area, such as by providing limited training and information from the local government, as seen in SEZs Tanjung Lesung (Trisniati et al., 2022).

Furthermore, from the business side, both SEZ developers and businesses within SEZs can also influence the impact of their presence. The Coordinating Ministry for Economic Affairs states that the commitment of business developers and businesses still needs to be improved in realising investment plans for SEZs development, where the amount of realised investments is far below government expectations (Junida, 2022). Additionally, the commitment of businesses to absorbing local labour still needs to be practical, as seen in

SEZs Bintan, where the use of local labour from the Bintan district still needs to be a priority (Putra, 2022). On the other hand, from the community side, the lack of participation from the community around SEZs is one of the reasons why SEZs have yet to impact the economy positively. SEZs Tanjung Lesung illustrates the need for more awareness among locals of the potential of their local tourism, which results in their inability to maintain the environment and lack of active participation in SEZs development in their area (Trisniati et al., 2022)

To maximise the effectiveness of SEZs in promoting economic growth and improving the welfare of local communities. Government, private sector, and communities must collaborate in developing and sustaining SEZs in their area. The government must commit to making changes, especially related to investment policies, so there are no overlapping regulations. Additionally, it should establish communication with businesses and potential investors to ensure that new policies are well-publicised. Furthermore, the government should develop strategies to increase the capacity of local communities by providing training and education to prepare them for working in companies operating in the SEZs.

Additionally, the government should support local communities in establishing small and medium-sized enterprises to support SEZ sustainability (Maftuhah, 2017; Yunarni & Haris, 2020). Moreover, the growth of small and medium-sized enterprises in SEZs also multiplies regional economic growth (Makalew et al., 2017). Moreover, businesses need to increase their commitment to SEZs development by realising the initial investment commitments and prioritising the local workforce in the companies operating in SEZs. Furthermore, to increase local communities' participation, the government and businesses must continuously guide and empower local communities around the SEZs.

The increasing poverty after the operation of some SEZs may also link to the resource curse phenomenon, where regions rich in natural resources often struggle to develop their economy and reduce poverty quickly. In some cases, the opposite occurs. It can happen due to rent-seeking, where individuals or groups attempt to gain profit from natural resources without considering the impact on society and the environment (Haryanto, 2018; Rahma et al., 2021; Ridena et al., 2021). SEZs can be related to a resource curse if rich natural resources are located in the area and must be regulated adequately by the government. SEZs can become a hub for foreign companies looking to exploit these resources, which can lead to rent-seeking. If the government cannot regulate the sustainability of SEZs, it can become a place where a resource curse occurs. The results found in SEZs that utilise natural resources vary, with some regions experiencing a decrease in poverty rates, such as the districts of Simalungun, Sorong, and Lhokseumawe, after the operation of the SEZs. In contrast, poverty rates have increased in Bintan, Kutai Timur, and Palu after the operation of the SEZs. However, one cannot conclude that the resource curse causes an increase in poverty. A deeper analysis is necessary to determine whether the phenomenon of a resource curse exists in these areas. The analysis should examine the role of the government in local economic development by considering budgeting and expenditure, the quality of institutions, and the quality of resources. However, this study could not analyse this further due to data limitations.

To reduce the risk of the resource curse in areas with SEZs, the government needs to ensure that the sustainability of SEZs, particularly those managing natural resources, is well-regulated and that there is transparency, accountability, and integrity for both the government and companies. Establishing policies that regulate the use of natural resources

in the area and the distribution of profits from their exploitation, along with transparently carrying out the decision-making process regarding SEZs, can help the local community understand how SEZs will impact them. Additionally, Insufficient regulation of SEZs can lead to environmental degradation and reduced quality of life for the local population. Thus, the government must also ensure that SEZ companies are responsible for their activities by meeting good social and environmental standards. Furthermore, to ensure that the local economy is not solely dependent on natural resources, the government must maintain balance by developing alternative sectors that support the local economy.

5. Conclusion and Recommendation

This study provides new empirical evidence regarding place-based policy in Indonesia, specifically SEZs, and their impact on poverty levels. By observing data from 2005-2021 in eight districts/cities with SEZs using the synthetic control method developed by Abadie and Gardeazabal (2003), this study found that the impact of SEZs on poverty rates varies among them., with an increase in poverty in four districts/cities and a decrease in poverty in four other districts/cities with a range of -2.426 to 1.231 percent.

This study found that three SEZs have a statistically significant impact on reducing poverty in their regions. In the industrial sector, SEZs Sei Mangkei in Simalungun District and SEZs Sorong in Sorong District have impacts of -2.426 and -1.541, respectively. In the tourism sector, only SEZs Mandalika in Lombok Tengah District significantly reduces poverty in its region with an impact of -1.559 percent. These varied results confirm the complexity of the social impacts of place-based policies such as SEZs (Neumark & Simpson, 2015).

The government, businesses, and communities each have their roles in contributing to the development and sustainability of SEZs. Government regulations, particularly those related to overlapping investments, the commitment of businesses to realise investments, and the lack of community participation are some reasons SEZs performance needs to be improved. Considering the various and still insufficient impacts of SEZs, this research can serve as a consideration or evaluation for the government in developing SEZs policies for existing and future SEZs developments. Furthermore, to ensure that SEZs will positively impact the economy and welfare in the future, the government, private sector, and community need to collaborate in developing and sustaining SEZs in their regions. The government needs to commit to making changes, particularly in investment policies. The government needs to improve SEZs development strategies, such as creating policies to provide competent human resources that can assist local unskilled poor communities in participating in economic zone development, such as providing access to training and education, as well as helping local communities build small businesses that can support the sustainability of SEZs. Additionally, businesses need to increase their commitment to SEZs development by realising investments following initial commitments and prioritising local labour for working in companies in SEZs. In order to increase community participation, the government and businesses need to conduct continuous guidance by empowering local communities around SEZs.

Then, SEZs can cause environmental damage and reduce the quality of life for local communities if it is not adequately regulated. To avoid this, the government must ensure that companies operating in SEZs meet high social and environmental standards. Lastly, the

government needs to maintain balance with other sectors by ensuring that SEZs do not divert attention and resources from other sectors that are also important for the economy and welfare of society. It can be done by ensuring a balance between SEZ investments and investments in other sectors.

This research has limitations, such as being unable to see SEZs policies comprehensively across Indonesia and evaluating SEZs policies over a more extended period due to the limited data available because most SEZs operation periods in Indonesia are short. Furthermore, although the selection of the districts/cities as control has taken into account the spillover effects, this research has yet to explain the extent of the spillover effects of the presence of SEZs in one area on surrounding areas. Finally, the study concludes that the synthetic control method can be utilised by researchers to create a counterfactual for policy interventions or treatments and subsequently assess their impact. Therefore, this method can be used in future studies to assess the effects of other policies in Indonesia and other regions or countries.

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