The development of the Kendal Industrial Estate into a Special Economic Zone (SEZ) is a very strategic need. In the context of national development, SEZ is one of the strategies to promote investment and increase competitiveness. For this reason, a range of policies is required. This includes the determination of the main criteria for the selection of the location of an area that meets the SEZ development requirements; the approval of policies required by these regions; and the most important is the provision of investment and institutional services that meet international standards. The Economic Feasibility Study of Kendal Industrial Estate was conducted using Net Present Value (NPV), Internal Rate of Return (IRR), Benefit Cost Ratio (BCR), Debt Service Coverage Ratio (DSCR) and Project Life Coverage Ratio (PLCR) calculations. The results show that the NPV was positive, IRR was above bank interest, the benefit Cost Ratio was very high at 82.22%, the payback period was 5 years and the benefit cost ratio was 23.65. Because there are no loans in KEK development, DSCR was not calculated. It can be concluded that the development of Kendal SEZ is economically highly feasible, seen from the positive NPV, IRR above the bank interest rate and Benefit Cost Ratio above 1. The existence of SEZ has a significant impact on regional income, poverty and unemployment in Central Java.

**Keywords:** Small Industrial Estates, Special Economic Zones, Economic Feasibility.

**INTRODUCTION**

In an effort to improve export performance, attract investment both domestic and foreign, and encourage economic growth, the Indonesian government launched the strategic area development program. This development began with the establishment of the Free Trade Zone and Free Port (KPBPB) in 1970 which then continued to expand until 2009 with the establishment of the Special Economic Zone (SEZ). The government is targeting the development of SEZs as an alternative solution to problems related to the investment and business climate in Indonesia (Damuri, Cristian and Atje, 2015).
Special Economic Zones are one of the strategic policies to boost regional economic growth in Indonesia. Encouraged by many success stories of SEZ development in various countries, especially China, Indonesia began implementing the SEZ strategy in the 1970s by making Batam, Bintan and Karimun areas as initial models. Rapid economic growth in this region has encouraged the government to develop a number of new SEZs in several other parts of Indonesia (Dharmastuti, Afrimadona and Kurniawan, 2018).

In Indonesia, the conception of SEZ is outlined through Law No. 39 of 2009 concerning Special Economic Zones. In this law, SEZs are developed with a view to accelerating economic development in certain regions that are strategic for the development of the national economy and for maintaining the balance of the progress of a region in the unity of the national economy. Based on Government Regulation No. 2 of 2011, Special Economic Zones are zones with certain boundaries within the jurisdiction of the Unitary State of the Republic of Indonesia designated to carry out economic functions and obtain particular facilities.

The main objectives of the SEZ establishment are to: (1) stimulate economic growth through export promotion, (2) attract foreign investment and increase foreign exchange earnings, (3) increase employment and (4) create technology and management transfers.

Kendal Industrial Estate, which will be the only Special Economic Zone in Java, is a joint cooperation between PT. Jababeka Tbk with Singapore Sembcorp Development. This cooperation is expected to be able to integrate local industry with global industry. The results of integration are expected to be able to:

1. increase new employment opportunities for Kendal Regency and the neighboring areas;
2. Increase the productivity competitiveness with technology for large and small industries (SMEs);
3. reviving the existing, declining business lines by enhancing competitive human resources and being able to be marketed globally;
4. open a network of organizations and communications in a wider global market;
5. improve Human Resources (HR) in education, technology, and Research and Development

The types of industries that will be developed in the first phase of the development of Kendal Industrial Estate SEZ include the textile, food, pharmaceutical, and furniture industries. These types of industries are aligned to the existing industries currently developing around the Kendal Industrial Estate. Other industries will also be developed, one of which is the automotive industry. Kendal Industrial Estate SEZ also provides a ready-use building factory that can be rented by industries that want to carry out their industrial activities in the zone.

The differentiation and main strengths of SEZ in Kendal Industrial Estate include:

1. Superhub 4.0: Smart Logistic Hub with the construction of the New Kendal International Port integrated with Smart Industrial Estate 4.0
2. Smart industry running Industry 4.0
3. Local industry integrators including SME - global industry; and
4. Developing major industry hubs for fashion & textile, furniture, food, pharmaceutical, and electronics that will involve the development of its industrial ecosystem including R&D.

The development concept of Kendal Industrial Estate into a Special Economic Zone can be seen in the following Figure 1.
Figure 1. The development concept of Kendal Industrial Estate into a Special Economic Zone

1. The function of the Kendal SEZ as an integration of Smart Port - Smart Industrial Estate that encourages production efficiency and logistics distribution
2. Center for Showing / Branding / Logistics;
3. Kendal SEZ is directed at large-scale export-oriented industries with an industrial theme determined in accordance with the industrial potential in Central Java Province;
4. Large industries in the Kendal SEZ are inter-connected or have a supply chain of goods originating from small and medium industries in Central Java Province;
5. The process of branding, packaging, and display of goods is carried out directly at Kendal SEZ;
6. Logistics, customs and goods delivery processes are done online (Big Data) which can be accessed through a smartphone and computer application so that time efficiency can be optimized (smart port apps);
7. Kendal International Port is planned to support the function of Tanjung Emas Port in Semarang, so that the logistics processing time can be optimized.

Objective

The establishment of the Kendal Industrial Estate into a Special Economic Zone was examined from various aspects, one of which is the economic aspect. This research aims to:

a. Assess the financial and economic feasibility of Kendal Special Economic Zone establishment.
b. Identify the economic impacts of the Special Economic Zone.
METHOD

This paper used descriptive and quantitative analysis methods. The first analysis is Financial Feasibility assessed using various criteria such as Payback period (PP), Net Present Value (NPV), Internal Rate of Return (IRR), debt service coverage ratio (DSCR) and project life coverage ratio (PLCR). The second analysis is to link a number of variables and provide an analysis of the implementation of special economic zones (SEZs).

1. Financial Feasibility Analysis:

The establishment of the Kendal Industrial Estate into a Special Economic Zone was examined from various aspects, two of which are the economic and financial aspects. Financial Feasibility was analyzed using criteria such as Payback period (PP), Net Present Value (NPV), Internal Rate of Return (IRR), DSCR and PPLCR.

a) **Payback Period (PP)**. The payback period is how long (the time period) is required to return the initial cash investment (initial capital). The payback period can be calculated using the following formula (Brigham & Houston, 2000):

\[
PP = YBC + \frac{\text{Initial Investment}}{\text{Cash Inflow during year}}
\]

where:

- \( PP \) = Payback Period
- \( YBC \) = Year before recovery

b) **Net Present Value (NPV)**. This criterion evaluates the economic performance of an alternative infrastructure implementation by calculating the difference or the discrepancy between costs and benefits during the analysis period. This difference is then assessed (present value) with a certain discount rate. The following formula can be used (Sartono, A.R., 1998):

\[
NPV = \sum_{t=1}^{n} \left( \frac{B_t - C_t}{(1 + i)^t} \right)
\]

- \( B_t \) = project gross benefit in \( t \) year
- \( C_t \) = project gross cost in \( t \) year
- \( n \) = project life
- \( i \) = discount level

A positive NPV value indicates that an alternative project is considered feasible and vice versa.

c) **Internal Rate of Return (IRR)**. This method is used to rank investment proposals using the rate of return on investment calculated by finding a discount rate that equates the present value of the expected project’s cash inflows to the present value of the project costs or equal to the discount rate that makes the NPV equal to zero. The following general formula is used:

\[
A_0 = \frac{A_1}{(1 + IRR)} + \frac{A_2}{(1 + IRR)^2} + \ldots + \frac{A_n}{(1 + IRR)^n}
\]
If \( Ao \) is an investment in periods 0 and \( A1 \) to \( An \) is the net flow from periods 1 to \( n \), then the IRR method solely looks for a discount factor that equates \( A0 \) with \( A1 \) to \( An \). Acceptance or rejection of this investment proposal is by comparing the IRR with the required rate of return. If the IRR is greater than the required rate of return, the project is accepted; if smaller, the project is rejected.

\( \text{d) Profitability Index (PI). Profitability index is the ratio between the total present value of costs and the total present value of benefits (benefits), which is obtained by converting values to a base year with a discount rate assumed to occur during the analysis period. The following formula is used (Sartono, A.R., 1998):} \]

\[
BCR = \frac{\text{present value of benefits}}{\text{present value of cost}}
\]

Investment is considered feasible if PI > 1, and vice versa.

In general, the NPV and PI methods are used to assess an investment proposal because the results are often consistent. In other words, if the NPV shows that a proposal is accepted, then the PI also shows it is accepted and vice versa. So, before calculating the PI, the NPV must be calculated first. If the decision cannot be taken after calculating the PI, the solution is to return to the NPV method.

2. Relationship Analysis of Certain Variables with the Special Economic Zone.

RESULT AND DISCUSSION

The feasibility assessment of the development of the Kendal Special Economic Zone phase I is based on the following assumptions:

1. Cost of Land \( \text{Rp 150,000} \)
2. Development Cost-saleable \( \text{Rp 370,000} \)
3. Area for sale \( 6,790,000 \text{ m}^2 \)
4. Rescom Area \( 1,260 \text{ m}^2 \)
5. Operational Cost for G&A + Marketing Cost \( 12.5\% \)
6. Tax (pph) \( 2.5\% \)
7. Expected land price growth \( 5\%/\text{year} \)
8. Expected development price growth \( 5\%/\text{year} \)

The investment requirement for the construction of the Kendal Industrial Estate SEZ is IDR 4,866,820,000,000, where the financing is a Joint between Jababeka (51%) and Sembcorp (49%). The division of the area development can be seen in the following Table 1.

<table>
<thead>
<tr>
<th>Table 1. Development Phase I (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture Industry Cluster</td>
</tr>
<tr>
<td>Electronic Industry Cluster</td>
</tr>
<tr>
<td>Logistic Hub</td>
</tr>
<tr>
<td>Automotive Industry Cluster</td>
</tr>
<tr>
<td>Textile &amp; Fashion Industry Cluster</td>
</tr>
<tr>
<td>Food Industry Cluster</td>
</tr>
<tr>
<td>Residential</td>
</tr>
<tr>
<td>Commercial</td>
</tr>
<tr>
<td>etc.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
For the preparation period, the construction of the SEZ requires the following costs can be seen in the following Table 2.

<table>
<thead>
<tr>
<th>CASH FLOW - IN MIO IDR</th>
<th>TOTAL</th>
<th>PRE-OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash In</td>
<td>19,149,383</td>
<td>502,331</td>
</tr>
<tr>
<td>Collection from</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Deposit &amp; AR</td>
<td>15,319,506</td>
<td></td>
</tr>
<tr>
<td>Down Payment 20%</td>
<td>3,829,877</td>
<td>119,448</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>382,883</td>
</tr>
<tr>
<td>Capital Injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash Out</td>
<td>11,031,941</td>
<td>440,628</td>
</tr>
<tr>
<td>Raw Land</td>
<td>1,678,173</td>
<td>225,000</td>
</tr>
<tr>
<td>Development Cost</td>
<td>4,894,741</td>
<td>148,000</td>
</tr>
<tr>
<td>Operating Expense</td>
<td>4,459,027</td>
<td>67,628</td>
</tr>
<tr>
<td>Cash Balance</td>
<td>8,117,442</td>
<td>61,704</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>16,080,222</td>
<td>144,131</td>
</tr>
<tr>
<td>Jababeka 51.00%</td>
<td>8,200,913</td>
<td>73,507</td>
</tr>
<tr>
<td>Sembcorp 49.00%</td>
<td>7,879,309</td>
<td>70,624</td>
</tr>
</tbody>
</table>

**Impact of Kendal Special Economic Zone Development**

From the calculation, the NPV of Kendal SEZ was positive; IRR was above bank interest; Benefit Cost Ratio was very high at 82.22%; payback period was 5 years; and the benefit cost ratio was 23.65. It can be concluded that the existence of Kendal SEZ is economically highly feasible.

The relationship of National and Regional Income Variables with the SEZ existence can be seen as follows:

1. **Increased National and Regional Revenues**

   The main objectives of the formation of SEZs are to: (1) stimulate economic growth through export promotion, (2) attract foreign investment and increase foreign exchange earnings, (3) increase employment opportunities and (4) create technology and management transfers. In the case of China, SEZs also function as an experiment to try out the implementation of capitalist policies (Leong 2012). These goals form the bases for several countries to increase economic development in the region. Increased trade through exports, increased investment, and the provision of employment opportunities are seen as indicators that can have a positive impact on the sustainability of economic activity in a region. The success achieved by China is inseparable from a number of steps taken by the Chinese government such as 1) strong commitment from the leadership, 2) preferential policy and broad institutional autonomy, 3) strong support and proactive participation of the government, especially in the field of public goods, 4) public-private partnerships, 5) foreign direct investment and investments originating from the Chinese diaspora, and 6) business value chains and social networks that are continuously well performing (Zeng, 2012: 2).

   China's success in implementing SEZs has become a model for several countries due to the strength of its economic performance. Chinese SEZs are important contributors to the development of China's industrial sector and facilitate large improvements in living standards and human development. The negative assessment of the SEZ in China focuses on the fact that national and regional government agencies - heavily involved in all aspects of zone implementation and management – have to bear huge costs in providing infrastructure and maintaining administrative procedures. In addition, the Chinese
economic zone has drawn criticism centered on issues such as labor rights and weak environmental protection (Cheesman, 2012: 6-8)

KEK is believed to be able to spur the pace of regional economic growth driven by trade and investment liberalization activities, promote the creation of new employment opportunities so as to reduce unemployment, increase the purchasing power and ultimately improve public welfare. The formation of SEZs not only provides benefits, as the regions also need to anticipate the possibility of negative impacts. Based on the analysis done in the previous sub-chapter, the overall impact of the SEZ formation can be seen in the Figures 2.

![Figure 2. The Overall Impact of the SEZ Formation](image)

### 2. Reduced poor population

SEZ plays a role in reducing the level of poverty in Central Java province. The average percentage of the Existing Poor Population in Central Java Province in 2010-2017 is 13.01%. In the year 2025 - 2030 with the establishment of the SEZ, it is hoped that the percentage of the poor will be reduced to 9.93 - 10.40% (Table 3).
Figure 3. Percentage of Poor Population in Central Java Province Year 2010-2017

3. Contributor to Gross Regional Domestic Product

KEK contributes to the Central Java GRDP as can be seen in the following Figure 4.

Figure 4. Contribution of Kendal SEZ Investment Value to Central Java GRDP Projection until 2025
4. *Growth and Savings of Foreign Exchange*

To increase direct investment in Indonesia, an investment climate change is needed. Compared to other ASEAN countries, especially those with relatively similar economic structures such as Thailand, the Philippines, Vietnam and Malaysia, the investment climate in Indonesia is still lagging behind in attracting investors. The development of Special Economic Zones is one of Indonesia's strategies to attract investment and increase Indonesia's competitiveness. For this reason, a range of policies is required. This includes the determination of the main criteria for the selection of the location of an area that meets the SEZ development requirements; the approval of policies required by these regions; and the most important is the provision of investment and institutional services that meet international standards. Incentives can be provided, among others, by exempting value-added tax (VAT / PPN) and Sales Tax on Luxury Goods (PPnBM) for re-exported products and ensuring simplified visa application service and foreign work permit. However, the most important incentive is the one-stop investment service where investors can obtain all the permits and documentation requirements promptly.

The establishment of special economic zones in several regions is expected to bring benefits to Indonesia in terms of: (1) increased investment; (2) labor absorption; (3) foreign exchange earnings; (4) competitive advantage of export products; (5) increased use of local resources, services, and capital to increase exports; and (6) increased quality of human resources through the transfer of technology. These objectives are in line with the government's vision to improve the economy and national distribution and create strong both macro and micro economic fundamentals.

The SEZ establishment is expected to be able to increase investments or businesses that can boost economic growth, which have an impact on increasing employment and reducing poverty. Nationally, the objectives include economic equality, especially from the perspective of income, and the competitiveness of national products. The establishment of a special economic zone requires thorough preparation and strong commitment from all stakeholders in supporting the activities conducted in the area. Preparation includes policies and institutions, incentives and financing as well as infrastructure support in accordance with regional spatial planning. SEZ thus becomes very important in increasing foreign investment in Indonesia. This is the main focus of
this article, which aims to 1) identify problems in existing economic zones and 2) analyze the impact of the SEZ establishment on investment, trade and labor growth.

![FOB Value (Million US $)](image)

**Figure 6. FOB Value (Million US $)**

The Central Java's exports value in 2011-2017 averaged 5-6 billion USD / year. In 2025-2030, SEZ is expected to increase the value of Central Java Exports from 2 to 2.27 billion USD / year (Figure 7).

![Volume Central Java Export Performance in 2014-2016](image)

**Figure 7. Volume Central Java Export Performance in 2014-2016**

5. **Increased Employment**

In accordance with the aim of establishing a SEZ, the government will provide incentives to businesses that will invest their capital in the region. The main incentive from the government is fiscal incentives in the form of various tax exemptions and excise. This will certainly reduce the potential for government fiscal revenue and thus must obtain macroeconomic compensation nationally. In this regard, in line with the effectiveness of government incentives to increase the amount of investment, the government expects an increase in production from the business sector, which will increase the number of jobs for the community. At the regional level, this will increase
equal distribution of economic opportunities. The increase of the income population will drive other economic activities in the country (which will indirectly encourage economic consumption activities in other sectors). This shows that SEZ can be a locomotive of the national economy. Even so, the government has not completely lost its fiscal potential because the government can still increase its income through levies on corporate income taxes and the imposition of VAT for some goods sold domestically. Therefore, the government must carefully consider the effectiveness of incentives and financing provided to the businesses operating in the SEZ. Job opportunities obtained by the regions can be illustrated using the concept of ILOR (Incremental Labor Output Ratio).

**Figure 8.** Comparison Chart of Open Unemployment Rate in Central Java Province and Kendal Regency

6. **Increased Tax Revenue**

   In general, the development of Special Economic Zones can increase foreign investment in a country by providing several incentives including:

   1. Reduction of income tax
      a. reduction of corporate income tax / Tax Holiday (for main activities)
      b. tax allowance (for non-main activities)
      c. Exemption from import tax article 22
   2. PPN and PPnBM
      a. Exemption from PPN or PPN and PPnBM
      b. VAT refunded

   With the growth and development of a Special Economic Zone in an area, the existence of potential loss must be recognized from the establishment of the Special Economic Zone in the form of the above incentives. However, the potential gain far exceeds the potential loss in the form of:

   a. increased community income
   b. taxes (especially PPH)
   c. direct Tax
   d. indirect tax
   e. employment opportunities (jobs)
CONCLUSION

The NPV of Kendal Industrial Estate SEZ is positive; IRR is above bank interest; Benefit Cost Ratio is very high at 82.22%; payback period is 5 years; and the benefit cost ratio is 23.65. It can be concluded that the existence of Kendal SEZ is economically highly feasible, seen from the positive NPV, IRR above the bank interest rate and Benefit Cost Ratio above 1. The impact of the SEZ existence on other variables is increasing the GRDP and reducing the unemployment and poverty.

REFERENCES


