

# Does Earmarking Tobacco Excise Revenue Sharing Fund (DBH CHT) Strengthen Illegal Cigarette Enforcement in East Java? An Interrupted Time Series Evaluation

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| Article Info                                                                                                                                                                           | Abstract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>Received: 2025-08-03<br/>Revised: 2025-09-20<br/>Accepted: 2026-05-20</p> <p><b>Keywords:</b><br/>DBH CHT, Earmarking, Enforcement, Illegal Cigarettes, Interrupted Time Series</p> | <p>The circulation of illegal cigarettes harms various sectors, including state revenue, industry, and health; therefore, their eradication requires adequate and well-targeted funding support. This study examines the impact of the DBH CHT earmarking policy introduced in 2021 on illegal cigarette enforcement in East Java, the largest recipient of DBH CHT in Indonesia. This research employs a quantitative approach using the Interrupted Time Series (ITS) method to analyze enforcement frequency over 13 years (2012–2024). The analysis was conducted at 14 Customs Offices in East Java Province that coordinate with local governments receiving DBH CHT. The results showed that, prior to the 2021 intervention, the frequency of enforcement against illegal cigarettes increased significantly from year to year. Following the intervention, enforcement frequency increased immediately and was statistically significant at the 10% level, though not at the conventional 5% level. Meanwhile, no significant change in the long-term enforcement trend was observed. These findings suggest that the DBH CHT earmarking policy has not yet produced a sustained strengthening effect on the government’s enforcement efforts against illegal cigarettes. This outcome indicates the need to improve the technical design of policy implementation, draw lessons from the management of existing “supervision funds,” and adopt more diverse and operationally effective enforcement strategies.</p> |

## I. Introduction

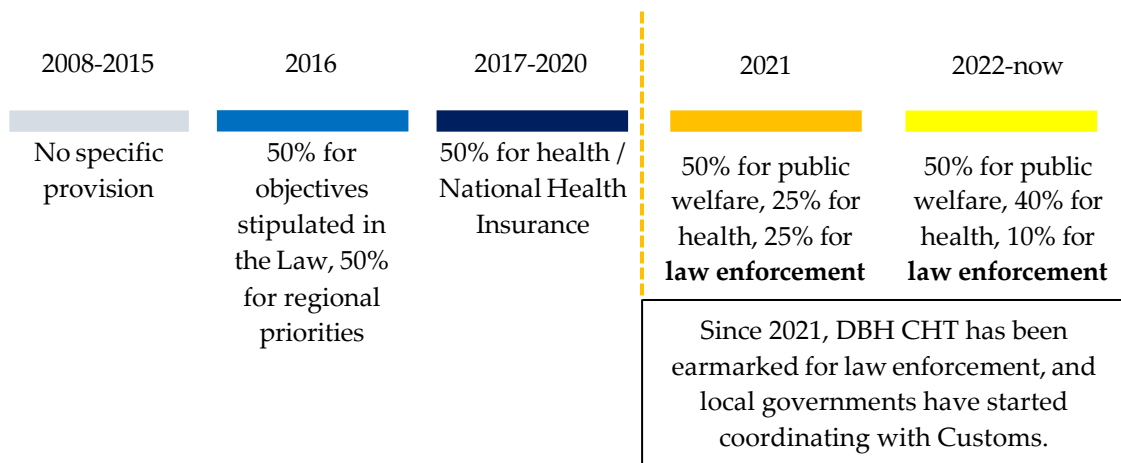
The circulation of illegal cigarettes in Indonesia has a broad impact and harms various sectors, including the country's economy and public health. A survey by UGM (Gadjah Mada University) on illegal cigarettes found that in 2023, 6.9% of cigarettes circulating in the market were illegal, up from 4.9% in 2020 and 5.5% in 2022. In terms of revenue, illegal cigarettes reduce state revenue that could otherwise be used for public welfare. Several studies have shown that illegal cigarettes reduce tax revenue derived from tobacco excise (Gallego et al., 2020; Wang et al., 2019). From the perspective of the tobacco industry, the circulation of illegal cigarettes results in a vast price disparity with legal cigarettes, thus creating an unbalanced playing field that is detrimental to the sustainability of the tobacco product industry. Low-income active smokers tend to buy illegal cigarettes because they are cheaper than legal cigarettes (Kartika et al., 2019). In addition, illegal cigarettes undermine the effectiveness of excise increases as a fiscal instrument and weaken efforts to protect public health because the alternative prices offered are cheaper than legal cigarettes (Vellios et al., 2019).

The eradication of illegal cigarettes is important if the government wants to optimize revenue, and this policy should be supported by adequate funding. Higher excise rates increase the price of legal cigarettes and, when combined with the stagnation of smoking prevalence in Indonesia (WHO, 2024), may encourage some consumers to switch to cheaper products through downtrading, including illegal cigarettes. Minh Ha et al. (2022) suggest that taxpayers respond to tax increases by engaging in informal economic activities and the shadow economy. This downtrading phenomenon erodes the market share of legal cigarette producers and threatens excise revenue.

Black-market practices are illegal, and the state suffers a loss of revenue (Joossens

& Raw, 2012; Oki & Babulu, 2021). Thus, law enforcement efforts against illegal cigarettes are a key factor in optimizing excise revenue. The eradication of illegal cigarettes increases tax revenues and strengthens fiscal policies (World Bank Group, 2019). At the global level, the World Health Organization, through the Framework Convention on Tobacco Control (FCTC), adopted the Protocol to Eliminate Illicit Trade in Tobacco Products (ITP) in 2013 (WHO, 2013). Article 36 of the ITP emphasizes that adequate financial resources are essential for combating illicit tobacco trade. The Protocol also encourages developed countries to provide financial and capacity-building support to developing countries.

**Picture 1. Overview of DBH CHT Utilization Provisions**



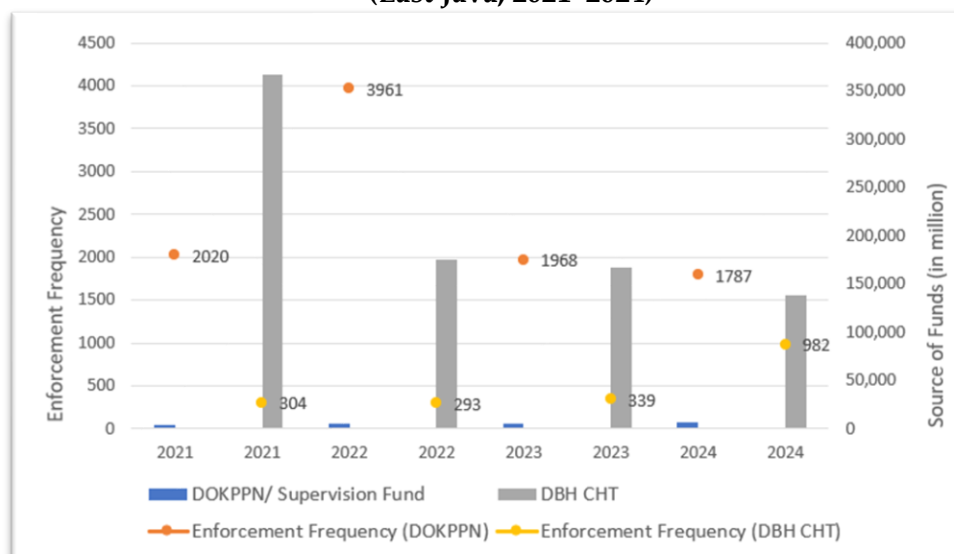
Source: Minister of Finance Regulation, processed by the author

The Indonesian government, through Customs, has allocated financial resources to address the problem of illegal cigarettes in the form of a Supervision Fund (DOKPPN). Since 2021, this funding arrangement has been complemented by the DBH CHT earmarking policy for law enforcement, with funding managed by local governments. The provision for the use of DBH CHT for the eradication of illegal cigarettes has actually become a mandate of the Excise Law (Undang-Undang 39, 2007).

However, in its implementation, the Minister of Finance Regulation (PMK) provided a 25% earmarking allocation for law enforcement, effective in 2021 (PMK 206, 2020), which was later reduced to 10% from 2022 onward. Operationally, joint enforcement activities between Customs and local governments receiving DBH CHT also began in 2021 (Picture 1).

The amount of DBH CHT allocated by local governments in East Java Province for law enforcement in 2021 reached IDR 367 billion, then decreased drastically to IDR 175 billion in 2022 due to the change in the earmarking proportion from 25% to 10%, followed by IDR 166 billion in 2023 and IDR 138 billion in 2024. This budget amount is significantly larger than the existing funds allocated for illegal cigarette supervision, specifically the DOKPPN/customs supervision fund, which amounted to IDR 4.1 billion in 2021, IDR 4.6 billion in 2022, IDR 5.8 billion in 2023, and was projected to reach IDR 6 billion in 2024. In principle, such a substantial increase in fiscal support should have strengthened enforcement capacity against illegal cigarettes.

**Picture 2. Comparison of Funding Sources and Enforcement Frequency (East Java, 2021–2024)**



Source: Data on DBH CHT and Supervision Fund

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However, in reality, even though the allocation of DBH CHT is significantly larger than that of the supervision fund, the supervision fund actually produces more frequent actions. For example, in 2022, with a supervision fund of IDR 4.6 billion, Customs carried out 3,961 actions, while DBH CHT, which had a much larger budget (IDR 175 billion), was associated with only 293 actions. A similar pattern was also observed in other years (Picture 2), indicating an imbalance in the use of supervision funds and DBH CHT to support efforts to crack down on illegal cigarettes.

In addition, although DBH CHT is expected to be an effective instrument and complement Customs supervision funds in the eradication of illegal cigarettes, the allocation of DBH CHT earmarking is often not optimally absorbed. For example, the consolidated report on the realization of DBH CHT in East Java Province for fiscal year 2023 shows that the average realization is 41.83% of the law enforcement ceiling (Gakum) that should be allocated. Of the available funds for Gakum, approximately IDR 307 billion, only IDR 128 billion was utilized, with the remainder reallocated to community welfare, health, and regional priority programs. The DBH fund allocation offers greater flexibility, enabling it to be combined with local income and other financial resources to meet regional spending priorities (Sengaji et al., 2019). In addition, only 4 (four) of 39 local governments in East Java (10.25%) recorded an absorption rate of  $\geq 100\%$  of the DBH CHT allocation in the field of law enforcement.

To the author's knowledge, no quantitative instrument has been used to evaluate the impact of the DBH CHT earmarking policy on law enforcement in eradicating illegal cigarettes, despite DBH CHT being expected to be an effective instrument and complement the Customs supervision fund since 2021. The application of CHT Earmarking across various countries primarily supports health and tobacco

control. Thailand established the Thai Health Promotion Foundation (ThaiHealth), while Australia created the Victorian Health Promotion Foundation (VicHealth) (Hilton et al., 2022). Both institutions were established through the earmarking of tobacco taxes and are specifically mandated to focus on public health promotion. Panama is the country (other than Indonesia) that implements earmarking for the eradication of illegal cigarettes and manages direct funding by Customs (WHO, 2016). Research by Shang et al. (2018) indicates that a small portion (approximately 8.3%) of annual tax revenue could support the WHO FCTC's tobacco control policies. Meanwhile, research by Ahsan et al. (2024) regarding the use of DBH CHT for law enforcement in Pasuruan, Kudus, Jepara, and Malang was carried out with a qualitative approach, while research by Suci Yaqiluh Nurzeha (2024) used a juridical approach to elaborate on the implementation of DBH CHT in East Java in the context of illegal cigarette law enforcement by Pamong Praja Police Unit (Satpol PP). This shows that previous studies have discussed DBH CHT mainly from qualitative and legal perspectives, leaving a gap for quantitative policy evaluation.

This research is important because tobacco excise accounts for approximately 96% of state revenue from the excise sector, with a 10% share of tax revenue over the last 12 (twelve) years (2012-2023). Any leakage due to the sale of illegal cigarettes has direct implications for the country's revenue and fiscal capacity. The

DBH CHT is a government instrument used to finance law enforcement efforts aimed at reducing this leakage. Therefore, it is essential to assess whether DBH CHT earmarking can enhance enforcement of illegal cigarette sales and, ultimately, reduce state revenue losses. Accordingly, this study empirically evaluates the policy using an Interrupted Time Series (ITS) approach, drawing on data from Customs Offices in East Java.

The research was conducted in East Java because it is consistently the largest

recipient of the DBH CHT allocation in Indonesia. In addition, East Java is a highly relevant empirical setting because it is a major contributor to national excise revenue, the largest tobacco producer in Indonesia, and home to many local governments that receive and implement DBH CHT. As reported by Audrine (2020), the DBH CHT, which significantly contributes to excise revenue, is growing under the ownership of the Regional Government in the province/district/city. Throughout the 2021-2024 period, East Java received substantial allocations, namely IDR 1.9 trillion in 2021, IDR 2.1 trillion in 2022, IDR 3 trillion in 2023, and IDR 2.7 trillion in 2024, representing an average of 55.74% of the total national DBH CHT allocation. Based on this background, this study addresses the following question: to what extent has the DBH CHT earmarking policy strengthened the enforcement of illegal cigarettes in East Java?

## 2. Research Method

**Table 1: Research Model**

|                                  |   |                                                                                                                       |
|----------------------------------|---|-----------------------------------------------------------------------------------------------------------------------|
| $\text{Enforcement}_t$           | = | Frequency of illegal cigarettes detained at time $t$                                                                  |
| $\beta_0$                        | = | Constanta                                                                                                             |
| $\beta_1 \text{ Time}_t$         | = | Year in numbers, trend in frequency of illegal cigarette crackdown before intervention                                |
| $\beta_2 \text{ Intervention}_t$ | = | Dummy: 0 before 2021, 1 after 2021, capturing the immediate impact after DBH CHT is applied                           |
| $\beta_3 \text{ TimeAfter}_t$    | = | $\text{Time}_t \times \text{Intervention}_t$ (The year after the intervention), capturing the trend change After 2021 |
| $\varepsilon_t$                  | = | Error term                                                                                                            |

Source: Author

This study employs a causal quantitative approach, utilizing the Interrupted Time Series (ITS) analysis method, to assess the impact of the Tobacco Excise Revenue Sharing Fund (DBH CHT) earmarking policy on the frequency of illegal

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cigarette crackdowns. The ITS method estimates level and trend changes after a clearly defined intervention point (Bernal et al., 2017). The unit of analysis in this study is the annual frequency of illegal cigarette enforcement at the office level. The dataset consists of panel data covering 14 Customs Offices in East Java Province observed over the 2012–2024 period (13 years). These offices were selected from a total of 16 Customs Offices in East Java because they coordinate with local governments receiving DBH CHT. Secondary data were obtained from the Directorate General of Customs and Excise (DJBC) and the East Java Provincial Government. The intervention point was set in 2021 because that was the first year in which DBH CHT earmarking for law enforcement was formally implemented and joint operations between Customs and local governments began. Data analysis was conducted using StataMP 17, specifically the command "xtitsa" (Linden, 2015, 2021). The model can be expressed as:

$$\text{Enforcement}_t = \beta_0 + \beta_1 \text{Time}_t + \beta_2 \text{Intervention}_t + \beta_3 \text{TimeAfter}_t + \varepsilon_t$$

(explanation in **Table 1**)

The data analysis in this study was conducted using Stata, following several systematic steps. The dataset was first configured into a panel time-series format. The ITS model was then estimated using the 2021 policy intervention as the treatment period, with robust standard errors employed to ensure validity. In this specification,  $\beta_1$  captures the pre-intervention trend,  $\beta_2$  captures the immediate level change after the intervention, and  $\beta_3$  captures the post-intervention trend change. Residual autocorrelation was tested using the Cumby-Huizinga procedure, and the model was re-estimated when necessary. To improve the reliability of the estimates, the model was re-estimated with an AR(1) correction when autocorrelation was detected. Finally, the results were presented graphically to facilitate interpretation of the policy's impact over time. Although ITS is

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appropriate for evaluating policy intervention over time, this study acknowledges potential threats to validity, including the possibility that other regulatory or economic developments during the observation period may also have influenced enforcement patterns.

### 3. Results and Discussion

#### A. Data Analysis

##### i. Estimation Results of the ITS Model (before Autocorrelation Test)

Table 2 presents the results of the initial ITS (before autocorrelation correction), showing a significant increase in the pre-2021 trend of approximately 7.6 cases per year. Following earmarking, there was an immediate increase of about 150 cases that was statistically significant at the 10% level ( $p = 0.065$ ), although not at the conventional 5% level. However, the long-term trend changes after the intervention were not significant ( $\beta_3 = -11.94$ ;  $p = 0.630$ ), indicating that the impact was more transient than a sustained trend shift. To ensure that the model properly accounted for the autocorrelation structure, an autocorrelation test was conducted using *actest* as suggested by Baum and Schaffer (2013).

**Table 2: ITS Estimation Results Before Autocorrelation Test**

| Variabel                              | Coefficient | p-value |
|---------------------------------------|-------------|---------|
| $\beta_1$ (trend before intervention) | 7.57        | 0.000   |
| $\beta_2$ (level change 2021)         | 150.319     | 0.065   |
| $\beta_3$ (trend change after 2021)   | -11.94      | 0.630   |
| Wald Chi2 (3)                         | 108.21      | 0.000   |

Source: Stata Data Processing Result

##### ii. Residual Autocorrelation Test Results (Cumby–Huizinga Test)

The Cumby–Huizinga test results (Table 3) indicate significant autocorrelation at lag 1 ( $p = 0.0359$ ). Although autocorrelation was also detected at lag 11 ( $p = 0.0443$ ), the absence of significant autocorrelation at the preceding lower-order

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lags (lags 1 to 10) suggests that the finding at lag 11 is better interpreted as a minor statistical anomaly rather than a substantive issue. To address the autocorrelation detected at lag 1 and improve the reliability of the estimates, the ITS model was subsequently re-specified by incorporating an AR(1) (autoregressive order 1) error structure. This adjustment enhances the robustness and statistical validity of the analysis. This step was necessary to produce more reliable coefficient estimates and to strengthen the model's statistical validity.

**Table 3: Cumby-Huizinga test result**

| H0: q=specified lag-1             |       |    |        |
|-----------------------------------|-------|----|--------|
| HA: s.c. present at lag specified |       |    |        |
| lag                               | chi2  | df | p-val  |
| 1                                 | 4.402 | 1  | 0.0359 |
| 2                                 | 2.376 | 1  | 0.1232 |
| 3                                 | 1.740 | 1  | 0.1871 |
| 4                                 | 2.137 | 1  | 0.1438 |
| 5                                 | 1.888 | 1  | 0.1695 |
| 6                                 | 1.414 | 1  | 0.2345 |
| 7                                 | 0.060 | 1  | 0.8059 |
| 8                                 | 0.121 | 1  | 0.7277 |
| 9                                 | 1.158 | 1  | 0.2818 |
| 10                                | 0.046 | 1  | 0.8297 |
| 11                                | 4.046 | 1  | 0.0443 |
| 12                                | 1.216 | 1  | 0.2701 |

Source: Stata Data Processing Result

*iii. Model Refinement and Re-Estimation with AR(1) Correction*

**Table 4: Estimation Results of the ITS Model with AR(1)/ Adjustment**

| Variabel | Coefficient | p-value | Interpretation |
|----------|-------------|---------|----------------|
|----------|-------------|---------|----------------|

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|               |                              |        |       |                                                                                                                                                                                                                           |
|---------------|------------------------------|--------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\beta_1$     | (Trends before intervention) | 8.27   | 0.000 | The trend of illegal cigarette enforcement frequency before the intervention (2012–2020) increased significantly by approximately $\pm 8.27$ cases per year.                                                              |
| $\beta_2$     | (Level Change-2021)          | 115.88 | 0.073 | There is a <i>level change</i> , but it is significant at the 10% level (not yet significant at the 5% level)                                                                                                             |
| $\beta_3$     | (Trend Changes after 2021)   | -1.49  | 0.940 | No change in trend (slope change), statistically insignificant.                                                                                                                                                           |
| Wald Chi2 (3) |                              | 110.73 | 0.000 | The three variables are jointly significant in explaining the variation in illegal cigarette enforcement in East Java, indicating that the ITS model is valid for evaluating the impact of the DBH CHT earmarking policy. |

Source: Stata Data Processing Result

As a follow-up to the residual autocorrelation findings in the initial model estimate, the model was corrected by applying error structure correction using the AR(1) approach (autoregressive order 1). This corrected model was then re-estimated using the `xtitsa` command with the `corr(ar 1)` option in Stata, yielding a more robust estimate that accounts for first-order autocorrelation.

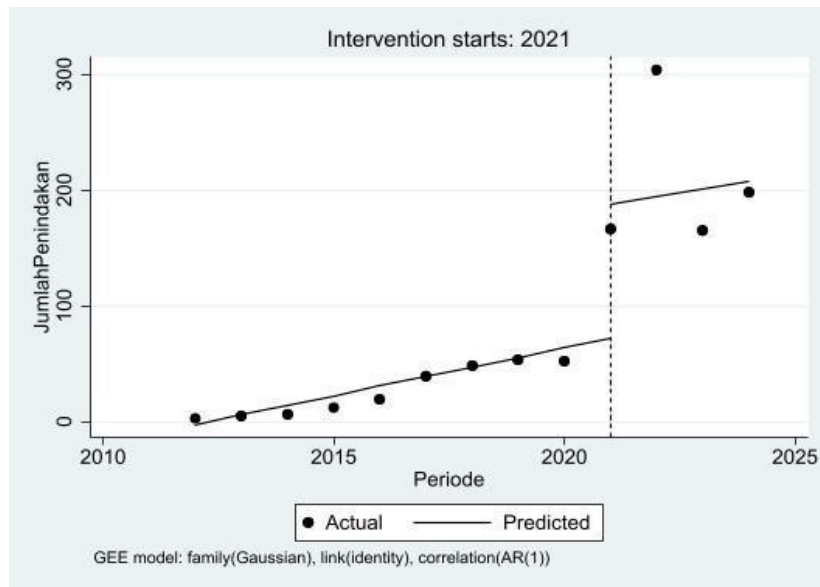
Based on the results in Table 4 and the Visualization of the ITS Model Results in Picture 3, the model indicates that prior to the 2021 intervention, the number of illegal cigarette enforcement actions showed a significant year-on-year increase. This finding suggests that enforcement activity had already been improving before the earmarking policy was introduced.

Following the intervention, there was a considerable increase in enforcement frequency; however, the effect was only statistically significant at the 10% level, not at the 95% confidence level. Meanwhile, no significant long-term trend change was observed. In practical terms, this means that the policy may have generated an initial increase in enforcement activity, but the available evidence does not show a sustained strengthening effect over time. This result should also be interpreted

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cautiously, as the post-intervention observation period remains relatively short for assessing the longer-term policy impact.

**Picture 3. Visualization of ITS Model Results**



Source: Stata Data Processing Result

## B. Discussion

The results of the ITS model in Table 4 indicate that the DBH CHT earmarking policy for law enforcement, implemented since 2021, was associated with a temporary increase in enforcement frequency (level change), although the increase was statistically significant only at the 10% level. However, in the long term (trend change), the intervention policy did not show a statistically meaningful impact on enforcement frequency. These results provide the initial basis for evaluating the impact of the DBH CHT earmarking policy as a fiscal intervention in the eradication of illicit cigarettes. The increase in enforcement frequency in the early stages (level change) is suspected to be due to growing awareness among local governments of the circulation of illegal cigarettes and their obligation to coordinate with Customs, as mandated by PMK 206/PMK.07/2020. In addition, extensive surveillance activities are carried out not only by Customs but also through information sharing and joint operations involving local governments and

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related law enforcement authorities (Aparat Penegak Hukum/ APH). However, in the long term (trend change), the impact of these policies became statistically insignificant, indicating that increased fiscal allocation alone was insufficient to sustain a strengthening effect. The insignificant long-term trend suggests that, in practice, DBH CHT funding managed by local governments has not yet become fully effective or operationally optimal in supporting illegal cigarette control.

These results are in line with several studies, including Ahsan et. al (2024), which used a qualitative approach to evaluate the use of DBH CHT for the eradication of illegal cigarettes in Pasuruan, Kudus, Jepara, and Malang, and concluded that strengthening funding through DBH CHT is a strategic step but requires an in-depth evaluation related to program design in the eradication of illegal cigarettes. Research by Suci Yaqiluh Nurzеха (2024) examines the implementation of DBH CHT in East Java, focusing on the enforcement of illegal cigarette laws by Satpol PP. It highlights a lack of synchronization between central and regional policies, hindering the efficient allocation of funds for law enforcement tasks. These findings reinforce the argument that policy effectiveness depends not only on the availability of funds, but also on institutional design, inter-agency coordination, and implementation quality. With proper program design and strengthening collaboration between agencies, law enforcement effectiveness can increase and have a significant fiscal impact. Ardana et al. (2025) show that the eradication of illegal cigarettes is significantly associated with increased excise revenue.

The study's findings show that, prior to the policy intervention in 2021, the actual trend in enforcement increased gradually, as indicated by  $\beta_1 = 8.27$  and a p-value of 1%. The  $\beta_1$  result indicates that the existing funding support before 2021, namely the supervision fund/DOKPPN, had already provided an operational basis for eradicating illegal cigarettes, even though the enforcement trend has been steadily

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rising. In this context, the management of DBH CHT by local governments can emulate the supervision fund/DOKPPN that previously existed and was used by Customs to support the eradication program of illegal cigarettes. In principle, the supervision fund/DOKPPN is managed to oversee urgent, important, or special fiscal policies in the field of customs and excise. The management of supervision funds/DOKPPN, as regulated in PMK 145/PMK.05/2011 (PMK 145, 2011), appears to have been more closely aligned with the operational needs of Customs enforcement. It has also taken into account the shadow economy dimension of illegal cigarettes, where informants (human intelligence) are often needed to penetrate closed distribution networks and obtain confidential information (DCAF, 2007; FBI, 2005; Saputra & Nugroho, 2016).

Within the framework of policy implementation theory (Grindle, 1980), regarding "content policy," there is an asymmetry between the local government that manages the fund and the Directorate General of Customs and Excise (Direktorat Jenderal Bea dan Cukai/DJBC), which has law-enforcement authority. Consequently, technical implementation depends on coordination/joint work meetings. The Classification, Codification, and Nomenclature of Regional Finance, which is the authority of the Ministry of Home Affairs, also has the potential to limit the flexibility of activity design. The more scattered the implementation locations, both geographically and organizationally, the more difficult it will be to implement a program, as the number of decision-making units involved increases (Grindle, 1980). This institutional arrangement helps explain why a larger earmarked budget does not automatically translate into more effective enforcement outcomes. In other words, earmarking may improve fiscal commitment, but its effectiveness still depends on governance alignment, institutional capacity, and customs-related enforcement practices (Ulep et al.,

2021). The DBH CHT policy for the eradication of illegal cigarettes is mandated by the Excise Law and the Central and Regional Financial Relations Law (Hubungan Keuangan antara Pemerintah Pusat dan Pemerintah Daerah/ HKPD). The DJBC carries out excise collection, and distribution and allocation are determined by the Directorate General of Financial Balance (Direktorat Jenderal Perimbangan Keuangan/DJPK). Funds are transferred to the regions annually as Regional Transfers (Transfer ke Daerah/ TKD), with a utilization mechanism regulated by the Minister of Finance Regulation (Peraturan Menteri Keuangan/ PMK). At the same time, its implementation is overseen by the local government, in coordination with DJBC, and follows financial management guidelines from the Directorate General of Regional Financial Development of the Ministry of Home Affairs. In the future, an in-depth study is needed on institutional issues related to the management of DBH CHT to eradicate illegal cigarettes, ensuring that the governance design sustainably supports policy effectiveness. Recent research by Nugroho & Setijaningrum (2024) suggests that, in general, DBH CHT faces problems with policy implementation. In the short term, strategic steps include strengthening communication and coordination among stakeholders, particularly DJBC, DJPK, local governments, and the Ministry of Home Affairs. The study by Fajriar and Khoirunurrofik (2025) states that the Ministries of Finance and Home Affairs must strengthen the process of continuous monitoring and guidance in the implementation of regional spending as an early warning system. Joint evaluation forums should be utilized to assess achievements and identify and formulate solutions to various implementation obstacles encountered in the field. Thus, the use of DBH CHT for law enforcement can be more targeted and in line with the initial policy objectives.

When viewed in a global context, the policy of strengthening funding and

earmarking for the eradication of illegal cigarettes implemented in Indonesia is basically the right step. However, this policy still leaves considerable room for improvement in both implementation and funding mechanisms, enabling the goal of controlling illegal cigarettes to be achieved more effectively. Research by Sara Rose Taylor et al. (2022) found that without adequate funding, tobacco control and eradication policies are unlikely to be effective. It is stated that one available funding mechanism is Domestic Resource Mobilization (DRM). WHO (2013), through the Protocol to Eliminate the Illicit Trade in Tobacco Products (ITP), in Article 36, "Financial resources," states that funding is crucial for the success of supervising illegal cigarettes. Accordingly, the Indonesian case should not be interpreted as evidence that earmarking is inherently ineffective, but rather as indicating that its effectiveness depends on how funds are governed, absorbed, and translated into concrete enforcement activities.

Upon examining the practice of tobacco excise/tax earmarking in various countries, it becomes apparent that there are at least two main differences: purpose and institution. Most countries utilize earmarking for health and tobacco control purposes (Union, 2014; WHO, 2016), while Indonesia and Panama have implemented earmarking for the eradication of illegal cigarettes. From the institutional side, various forms of earmarking management exist, including foundations, ministries, semi-autonomous bodies, and local governance, as seen in Indonesia. This difference shows that there is no one universal governance model (one size does not fit all). Indonesia's advantage lies in its focus on eradicating illegal cigarettes, a strategy rarely adopted by other countries. However, institutionally, it can be further studied whether its management is indeed more appropriate for local governance or an institution tasked with supervising cigarettes, as is the case in Panama. This comparison suggests that Indonesia's

challenge lies less in the policy objective itself than in selecting a governance model capable of converting earmarked resources into measurable enforcement outcomes.

Based on the Minister of Finance Regulation Number 72/2024 concerning the Use of Tobacco Excise Revenue Sharing Funds (PMK 72, 2024), the types of activities in the field of law enforcement are currently limited to three aspects, namely industry development, socialization of provisions in the excise sector, and eradication of illegal cigarettes. Referring to the Illicit Trade Protocol (ITP) issued by the WHO FCTC (2013), the effectiveness of illegal cigarette surveillance can be expanded/improved through strengthening mechanisms such as supply chain monitoring, implementation of a comprehensive track-and-trace system, tightening licensing and due diligence procedures, increasing international cooperation, and providing exceptional training for law enforcement officials who handle illegal cigarette control. In addition, enforcement strategies should also consider targeted monitoring of high-risk areas and informal distribution channels (Little et al., 2020). On the other hand, the fulfillment of the DBH CHT budget allocation for law enforcement, as mandated by PMK, has not been optimal, indicating that fiscal space remains available for program and activity design to support the eradication of illegal cigarettes. From a policy perspective, this means that future reform should not only focus on maintaining earmarked funding but also on improving spending absorption, refining technical implementation guidelines, and broadening enforcement instruments to ensure fiscal support yields stronger, more sustainable enforcement outcomes.

#### **4. Conclusion and Recommendation**

##### ***A. Conclusion***

This study assesses the impact of the Tobacco Excise Revenue Sharing Fund

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(DBH CHT) earmarking policy, implemented since 2021, on strengthening the enforcement of illegal cigarettes in East Java. It uses the Interrupted Time Series framework for the period from 2012 to 2024. The results show that, prior to the 2021 intervention, the number of illegal cigarettes detained increased significantly year over year. Following the intervention, there was a considerable increase in the frequency of action, but the effect was statistically significant only at the 10% level and not at the conventional 5% level. Meanwhile, no significant long-term trend changes were found. These findings indicate that the policy may have generated an initial increase in enforcement activity, but it has not yet demonstrated a sustained strengthening effect over time. This study is limited to East Java and relies on enforcement frequency as its main indicator; further research is needed to examine broader outcomes and other regional contexts.

#### ***B. Recommendation***

Although, from a global perspective and substantively, the policy of strengthening funding and earmarking for the eradication of illegal cigarettes implemented in Indonesia is basically the right step. However, the impact of DBH CHT earmarking policy interventions on the enforcement of illegal cigarettes has not yet produced a sustained strengthening of government enforcement efforts. Therefore, it is necessary to improve the technical guidelines for policy implementation, strengthen monitoring and evaluation mechanisms, and enhance coordination between DJBC, local governments, and related ministries/agencies. In addition, lessons from the management of the supervision fund/DOKPPN should be adopted, particularly regarding operational flexibility and alignment with enforcement needs. More diverse supervisory strategies should also be developed, including stronger information sharing, more targeted joint operations, and broader use of enforcement-supporting instruments. Through these measures,

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DBH CHT policy interventions to eradicate illegal cigarettes are expected to produce a more optimal and sustainable impact in the future, while also contributing to better fiscal decentralization and excise governance in Indonesia.

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