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Original Article

Evaluation of Domestic Market Obligation (DMO) Implementation on Cooking Oil Export Performance

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Abstract *- The Domestic Market Obligation (DMO) policy, implemented to stabilize Indonesia's domestic cooking oil supply and prices, has significantly impacted the export performance of refined, bleached, and deodorized palm oil (RBDP Olein). This study evaluates the effects of DMO on the export performance of PT. Citra Borneo Utama Tbk, a major player in Indonesia's palm oil industry, proposes optimisation strategies. The results indicate a mixed impact of DMO, with positive effects such as market stability and production efficiency, alongside challenges like reduced export flexibility, dependency on domestic markets, and compliance inefficiencies. Export volume steadily recovered post-implementation, supported by strategic compliance with DMO regulations. Three primary strategies were identified to enhance export performance under DMO: market diversification to emerging regions like Africa and the Middle East, strengthening stakeholder collaboration to improve regulatory compliance, and technological innovation to boost production efficiency. The study aligns with global insights, highlighting the delicate balance required between domestic market obligations and export growth. These findings underscore the importance of policy refinements to ensure domestic market regulations contribute to economic growth while maintaining competitiveness in global markets. Future research should explore the long-term impacts of DMO and potential synergies between domestic and export markets for sustainable industry growth.*

Keywords *- Domestic Market Obligation, RBDP Olein, Palm oil export, Market diversification, Production efficiency.*

1. Introduction

Indonesia is the world's largest producer and exporter of palm oil, contributing around 57% of the global production and Malaysia with another 27% [1]. Refined, Bleached, and Deodorized Palm Olein (RBDP Olein) is a derivative of Crude Palm Oil (CPO) that is important for the Indonesian economy both as a staple food and in exportation. It has an economic value that extends internationally, with the main export countries being China, India and the Netherlands, which contribute about 40% of Indonesia's trade revenues [2]. This reflects the double role of RBDP Olein as an international trade engine and a product that promotes rural development and jobs [3,4].

The Government of Indonesia introduced the Domestic Market Obligation (DMO) policy to stabilize the availability and prices of cooking oil in the country due to the global price of Crude Palm Oil (CPO) and its effect on the domestic price of cooking oil [5,6]. Given its objective to protect domestic consumers, the DMO has been challenged to mitigate its impact on export, resulting in decreasing export volumes, declining competitiveness, and difficulties in complying with international standards for sustainability, particularly in the European market [7,8]. Yet, no in-depth analysis has been conducted regarding the impact of the DMO policy on cooking oil exports at the company level, specifically for large producers such as PT.

Citra Borneo Utama Tbk. Previous analyses have been devoted to investigating the effects of DMOs on domestic supply and price, but comparatively little attention has been paid to their implications for exporters contending with regulation and market impediments and focused on filling the gap as companies in the palm oil space increasingly struggle to raise a barrier towards their domestic policy to continue to be competitive, domestically and in the global market.

The interplay between domestic and international markets can be observed from the ripple effects of the global market dynamics on Indonesia's cooking oil sector. The increase of edible oil prices in 2022 due to leveraging global demand for alternative vegetable oils due to geopolitical tensions of the sunflower oil supplies also contributes to domestic volatility in the food market through pressure and scarcity [9]. These challenges have highlighted the need to balance domestic policy goals with export market demands.

Cooking oil, especially unbranded kinds with added vitamin A, is also important in public health. The Indonesian government has employed cooking oil to address vitamin A deficiency at a population level through fortification programs that target a substantial part of the population [10,11]. These efforts, however, must be reinforced without sacrificing the export potential of RBDP Olein, which emphasizes the need to align policies.

For example, trade arrangements like the ASEAN-China Free Trade Area (ACFTA), which have improved market access and competitiveness, have continued to facilitate the expansion of Indonesia's cooking oil exports into main international markets [12]. While sustainability rules like the European Union's Renewable Energy Directive (RED) are important to uphold, they have also added to the challenges exporters face, often needing to meet onerous criteria that inhibit their market access [8]. Such challenges render the implications of DMOs on export performance requiring a kind of exploration for more targeted domestic-international priority balancing strategies.

A similar case can be seen in Malaysia, where its palm-based oleochemical industry has been competitive in trade with the best global producers [13]. Research has indicated that Malaysia's downstream palm oil (oleochemical products) competitiveness has been generally strong and stable in the mid-to-late period, contributing to its high-value-added product diversification. This explains the rationale for moving away from upstream (CPO exports) to downstream industry (further process) for greater trade competitiveness in the longer term. Conversely, Indonesia's palm oil sector is still highly dependent on crude palm oil exports, and challenges towards downstream expansion are worsened by domestic market policies like the DMO. Consequently, gaining insight into how trade policies drive competitiveness in upstream and downstream segments is critical to deriving improved export strategies, at least from the firm's perspective.

In light of these issues, the extent to which DMO policies could be enhanced to meet domestic supply requirements and Indonesia's long-term trade competitiveness must be examined. This study focuses explicitly on PT. Citra Borneo Utama Tbk. to measure the implication of DMO policy for its cooking oil industry export performance and its trade competitiveness. This research aims to offer strategic recommendations that directly and indirectly balance the policy implications by analyzing domestic supply objectives to support its competitive advantage in the global market adequately.

This study has the hypothesis that the application of the Domestic Market Obligation (DMO) policy has a significant effect on the export performance of PT. Citra Borneo Utama Tbk is needed to balance domestic supply priorities and competitiveness with the global market. Although the policy would stabilise domestic cooking oil prices, it could also hamper export flexibility, constraining the company's ability to respond to international demand." Moreover, domestic supply constraints and competitive shifting demand in world markets also affect the effectiveness of DMO in supporting trade competitiveness because funds remain available for regulatory enforcement.

The company's ability to adapt to these distribution channels will likely drive its long-term performance on export and operational levels. This study investigates the relationships to provide insights on aligning policy measures with corporate strategies to enhance palm oil export market competitiveness.

2. Methodology

This study combines quantitative research with qualitative research that aims to investigate the effect of the Domestic Market Obligation (DMO) policy on cooking oil exports by PT. Citra Borneo Utama Tbk. The use of both quantitative and qualitative methods for the research ensures thorough examination and reasoning of the analysis. Using primary data sourced through structured interviews and Focus Group Discussions (FGDs) with key stakeholders, such as executives of PT.

Citra Borneo Utama Tbk, policy makers, and trade experts to investigate the challenges and strategic adjustments to the DMO policy. To obtain secondary data, the company that aligns USAID with export and sales data (2021 to 2023) and relevant government regulations (Permendag No. 33/2022 and Permendag No. 49/2022) and industry reports. A literature review of academic studies and trade analysis reports provides context for the findings and benchmarks the performance of PT. Citra Borneo Utama Tbk in the broader palm oil export industry.

Quantitative analysis comprises trend analysis to compare export volumes across three years, performance metrics to measure revenue and market share, and econometric modelling to assess the relationship between DMO implementation and export outcomes.

Issues related to reduced export volume, dependence on the domestic market, efficient operation management, etc., are retrieved as recurring themes and analyzed through the qualitative data sets, including interviews and FGDs. It is also used to simulate policies to assess possible impacts of changes in Domestic Market Optimization (DMO) regulations like the domestic allocation requirement or export quotas.

The use of triangulation of primary and secondary data serves reliability, and stakeholder review of early findings verifies the outcome.

This study will give input about the impact of PT's export performance. Citra Borneo Utama Tbk, the role of DMO, operational challenges, strategic challenges, discrepancy of DMO policy, and balanced perspective recommendation for the DMO and export performance. Moreover, ethical protocols like informed consent and protection of confidential information about sensitive data are preserved at each stage of the research process. The analysis primarily relies on descriptive and comparative methods rather than statistical modelling. However, additional explanations have been included to justify the approach and ensure clarity in the interpretation of findings.

3. Results and Discussions

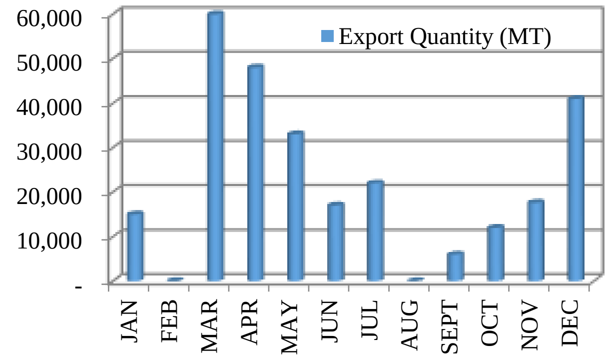
3.1. Export Volume Analysis Before and After DMO Implementation

Impacts of DMO Implementation on Domestic Market Balance: Figure 1 emphasizes the trends in Export performance before and after implementing the DMO, affirming that the policy impacted the company's balance of domestic versus international markets—data from PT. Citra Borneo Utama Tbk shows a vast divergence in export volume before and after enforcing the Domestic Market Obligation (DMO) policy. Before the DMO in 2021, the company exported with varying volumes, having no export for February and August due to stock allocation for domestic purposes (Figure 1 (a)). However, in 2021, the export volume reached 271,600 tons, limited by the lack of regulation that prioritizes domestic markets.

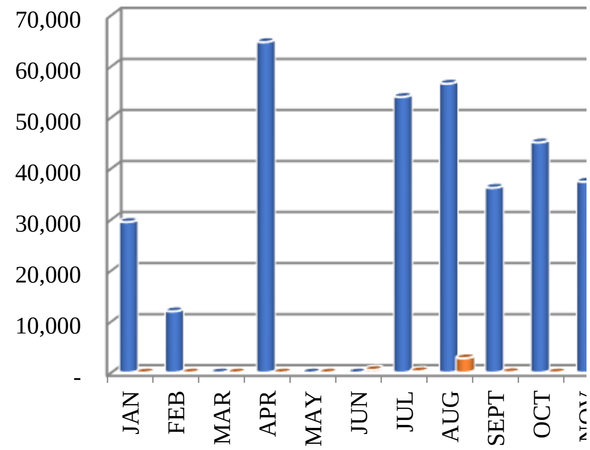
Notably, after the implementation of DMO, the export volume increased significantly, as indicated in Figures 1(b) and 1(c) in contrast. The government export bans that halted export activities in May-June 2022 were later followed by DMO requirements, allowing PT. Citra Borneo Utama Tbk to maintain its export performance. The company also witnessed strong export volume growth due to its strong compliance with the DMO and the timing of its allocation of Domestic Price Obligation (DPO) sales.

For more detail, Table 1 provides a monthly breakdown of export volumes and DMO allocations from 2021-2023 in metric tons (MT). This table provides a more nuanced understanding of the general trends shown in the figures, especially regarding medium-term oscillations in export performance and the increasing importance of DMO regulations over time.

The data shows that there are significant differences in export volumes over the past three years, with the highest total recorded in 2023 (575,500 MT) revealing a marked increase when compared to 2021 (271,600 MT) and 2022 (367,546 MT). Although the DMO policy was enacted in 2022, the full effect was not felt until 2023, when it reached 28,542 MT. This was particularly marked by spikes of 8,080 MT in July and 3,000 MT in September and November.



(a)



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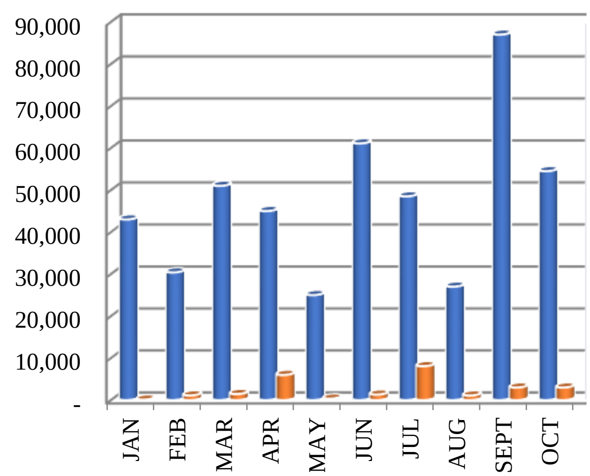

(c)

Fig. 1 Comparison of export volumes (a) 2021, (b) 2022, and (c) 2023

The pattern of export volumes to DMO allocations suggests that an increase in DMO requirements did not impede the growth of exports. The company is capable of manoeuvring between policy regulations and its wildfire exports and made a particularly strong showing in 2023 when export quantities surged alongside DMO compliance. On the other hand, low or absent DMO allocation periods, e.g., February and May 2022, showed lower export volumes as well, indicating that the absence of DMO regulation only does not lead to higher exports.

Table 1. Comparison of export and DMO quantities (2021–2023) in metric tons (MT)

	2021	2022		2024	
	Export	**Export**	**DMO**	**Export**	**DMO**
Jan	15,000	29,500	-	43,000	118
Feb	-	12,000	-	30,400	1,115
Mar	60,000	11	-	51,000	1,454
Apr	48,000	64,745	-	45,000	6,000
May	33,000	-	-	25,000	360
Jun	17,000	-	502	61,100	1,315
Jul	22,000	54,000	250	48,500	8,080
Aug	-	56,600	2,801	27,000	1,100
Sep	6,000	36,200	68	87,000	3,000
Oct	12,000	45,090	7	54,500	3,000
Nov	17,600	37,400	-	90,000	3,000
Dec	41,000	32,000	-	13,000	-
	271,600	**367,546**	**3,628**	**575,500**	**28,542**

Ideally, the measures taken should be consistent with Indonesia's commitment to trade facilitation, as reflected by the past implementation of DMOs, which has translated into a decreased share of Indonesia's palm oil exports down from 70% to 65%, representing the trade-off between fulfilling domestic needs and international market opportunities [14]. This began a string of exporting disasters that Indonesia is battling even today — whether balancing its export competitiveness with its domestic needs.

3.1.1. Comparative Analysis of Indonesia and Malaysia's Export Policies

Conversely, Malaysia enjoys a relatively open export market where internal responsibilities do not heavily dictate pricing to the domestic supply chain. Malaysia's market-oriented approach enables its exporters to immediately respond to price changes, adding greater flexibility to international trade. Thai CPO prices are strongly affected by a 1% increase in Malaysian CPO prices, reflecting the interconnectedness of regional palm oil markets [15]. Conversely, Indonesia's DMO policy limits market flexibility, making its exporters less responsive to price changes than Malaysian exporters.

3.1.2. Effects of Trade Barriers and External Policy Influences

Indonesia's palm oil exports are increasingly affected by foreign policies, especially the non-tariff barriers adopted by the EU under the Renewable Energy Directive (RED). Such policies create hurdles for exporters in Indonesia and restrict market access while also creating a compliance burden.

On the other hand, Indonesia has adjusted to such barriers by improving their recently implemented Indonesian Sustainable Palm Oil (ISPO) certification, which has paradoxically allowed export volumes to increase as compliance measures were tightened [16,17].

This means market entry constraints from global sustainability requirements are counterbalanced by industry adaptations that may yield long-term success.

3.1.3. The Effect of DMO on Indonesia's Export Performance

The data in Table 1 further strengthens the effect of DMO on Indonesia's export trend. In 2022, under DMO, domestic allocation climbed (3,628) and further expanded during 2023 (28,542). Nevertheless, exports in total for 2023 (575,500 MT) have soared in comparison with 2021 (271,600 MT) and 2022 (367,546 MT).

This pattern reveals how DMO policies restrict export flexibility, yet firms have adapted by realigning production and market strategies, enabling them to remain competitive despite the regulations.

3.1.4. Counterbalancing Internal and External Competitiveness

Indonesia's DMO policy reveals the fragile line between domestic needs and international price consumers. Notably, domestic price stability and enhanced participation in the local market are important advantages of the policy [18].

However, at the same time, the policy can create new challenges in terms of developing the export market and international trade tensions [19]. Moreover, sustainability compliance has become a crucial component for global buyers, and DMO policies need to align with international standards without compromising Indonesia's status as a major palm oil exporter [20].

3.2. Positive Impacts of DMO Policy

Figure 2 shows the relationship between DMO compliance levels and export volume growth, representing the operational benefits obtained by PT. Citra Borneo Utama Tbk. DMO policies have produced several positive impacts on PT. Citra Borneo Utama Tbk, including stability of the market:

The obligatory allocation of coal in the domestic market, which forces the company to make sales to the domestic market, causes the stability of the price of basic commodities in Indonesia, as can be seen from the relatively low volatility of prices in the local market [9]. This is in line with the research of Priwiningsih and Abidin [6], which stated that the government's intervention plays an essential role in their effort to suppress prices.

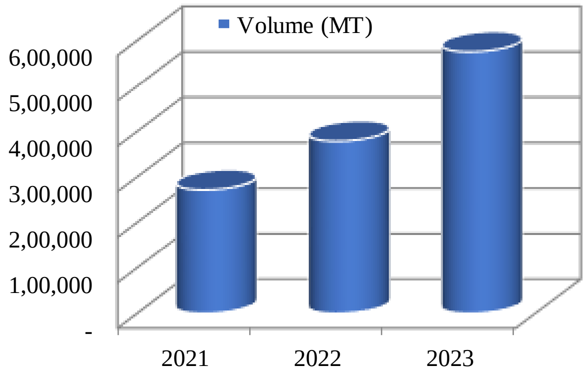

Fig. 2 Contribution of DMO compliance to export volume growth (2021–2023)

Import Substitution at Home: The company received export approval quotas by fulfilling domestic market needs, leading to a 25% export volume increase in 2023 over 2021. That is an example of how to complete the integration between domestic and export strategies [7].

Operational Efficiency: Through the DMO, the DMO encouraged the company to streamline its refinery operations, getting better productivity and lowering costs. These results echo the arguments by Hamidi et al. [1], focusing on the economic efficiency associated with effective trade policies.

3.3. Challenges and Negative Impacts

Self-Sustaining Export: With export approval quotas given by meeting domestic market needs, the volume of exports increased by 25% in 2023 compared to 2021, which reflects how to realize the integration between domestic and export strategies [7].

Operational Efficacy: Under the DMO, the DMO motivated the organization to streamline its refinery operations, resulting in improved efficiency and reduced costs. These findings mirror the claims of Hamidi et al. [1] and focus on the economic efficiency linked to effective trade policies.

Figure 3 highlights the key obstacles to export performance beyond the DMO and stresses the need for proper vigilance and compliance. However, this policy also presents challenges for PT.

Citra Borneo Utama Tbk: 1. Limited Export Flexibility: The DMO policy stifled export opportunities during months of high international demand, leading to revenue lost.

This was in line with the study of Tyson and Meganingtyas [8], who found similar limitations in the Indonesian palm oil sector.

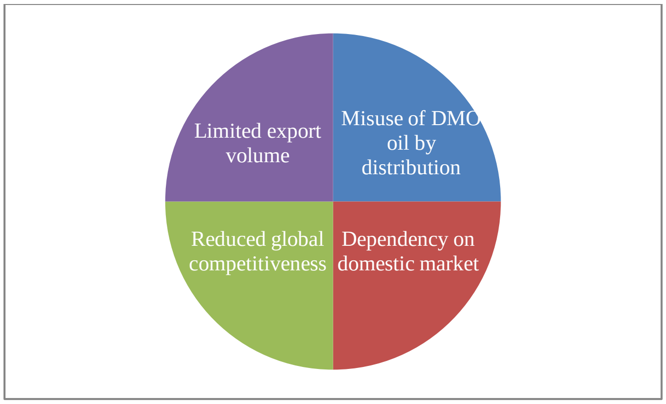

Fig. 3 Challenges in export performance under DMO policy

Heightened Dependence on the Domestic Market: The limited emphasis on foreign markets made the companies excessively reliant on the local market and demand, which posed risks if the domestic customers started saturated with the products. As Gouel [21] and Lagat [22] noted, overregulating markets reduces competitiveness in global trade while preventing the emergence of products reacting to demands from related industries.

3.4. Comparative Analysis with Prior Studies

Implementation Barriers: Reselling DMO products at market rates by distributors who do not comply with the policy dilutes the effectiveness and benefits of the policy. This worry is similar to the struggles highlighted by Silitonga et al. [23], where regulatory lacunae compromised policy effectiveness.

These study results fit the general trends in the palm oil industry, especially in terms of domestic needs and export performance. This study further highlights the simultaneous market integration of home and foreign market attention. This strategy aligns with concepts introduced in the research conducted by Hamidi et al. [1], that balancing commitments at home and opportunities abroad is essential for the industry's steady growth. By limiting access to domestic supply through mechanisms such as DMO whilst optimizing the gains from exports, companies can guarantee they remain compliant with government requests without sacrificing competitive exposure in world markets.

The volume of exports is a driving force for Indonesia's economy, so the restrictions pose major challenges. The export-led growth hypothesis sees economies with a central focus on GDP growth through foreign exchange earnings and economic stability [24]. Export volume restrictions may lead to losses in terms of foreign exchange earnings, which becomes a negative balance of payments phenomenon that increases vulnerabilities [25, 26]. Export taxes or restrictions also distort markets, reduce competitiveness, and hurt producers and consumers [27, 28]. As agricultural exports are fundamental to the Indonesian economy, there are ripple effects from these disruptions as well [29]. Therefore, the high levels of exports are important for the balance of payments consolidation process and for achieving long-term economic growth [30,31].

Understanding how the policy works in practice is important because the State's mandate can stabilize domestic markets and protect the people by empowering government action to protect the community's interests, as seen in the study of Priwiningsih and Abidin [6]. However, like their finding, this study suggests that such policies' success largely depends on how well they are designed and implemented. Targeted interventions are appropriate but avoid all possible unintended consequences of measures that must be taken to maximize the outputs and reduce them through supply chains and export margins. While not generalizable, they provide important insights for both stability in the supplying countries and systems of trade among those countries regarding what domestic market regulations such as DMO may mean.

3.5. Strategic Recommendations

In addition, Figure 4 shows the seven actions that have been described as best practices to address the export performance of PT. Citra Borneo Utama Tbk to implement DMO regulation and remain sustainable and competitive. The first approach focuses on entering new markets to reduce reliance on traditional export countries by looking for new opportunities in developing locations in Africa and the Middle East. The second mechanism is stakeholder collaboration, which can be found in the endeavors involved in partnering with government agencies and local distributors to ease the occurrence of problems such as distributor non-compliance throughout the process. The third one is to innovate in production by investing in advanced technology to increase refinery efficiency and optimize production according to domestic and international demand.

Fig. 4 Proposed strategies for export optimization under DMO policy

Additionally, this logic helps the company improve its capacity and efficiency when production and logistic systems are optimized to cut costs and further enhance global competitiveness. Strategy 5: Purchase unused export allotments from other manufacturers to increase exports; another way would be pollution control. Use government incentives—financial or otherwise—to offer compliance support with DMO policies, thereby facilitating export growth. Backing licencing is one such incentive. Frequent reconnoitring changes in DMO rules to react accordingly, producing adaptive strategies for continuous performance in an environment dynamic enough for this. These construct an all-around way of tackling the DMO challenge and increasing export performance.

4. Conclusion

PT. Citra Borneo Utama Tbk's export performance has been significantly impacted by the Domestic Market Obligation (DMO) policy's implementation. Positively, the policy's main goal of prioritising domestic needs was achieved when it was able to stabilize domestic cooking oil prices and guarantee a sufficient supply for local consumption. Increased export volumes in 2023 demonstrate the company's successful policy adaptation, which also used adherence to DMO regulations to get export permissions. Furthermore, the policy promoted operational efficiency, which led PT. Citra Borneo Utama will balance the demands of the home and foreign markets and optimize production processes. However, the report also pointed out some difficulties with the strategy's application. The restriction on export flexibility limited the company's capacity to maximize market possibilities, especially in times of great worldwide demand. The required distribution for the home market brought hazards associated with meeting worldwide demand and preserving global competitiveness. Furthermore, revealing inadequacies in enforcement systems were problems like non-compliance by distributors and the resale of DMO-designated products at higher commercial rates, undermining the policy's stated purposes. Many strategic strategies are proposed to address these difficulties. Diversifying markets and exploring new foreign commercial prospects may alleviate risks linked to export restrictions. Enhancing compliance monitoring and regulatory enforcement would improve the policy's efficacy and ensure equitable market practices.

Moreover, investments in manufacturing efficiency and technical innovations could enhance supply chain operations, facilitating improved responsiveness to regulatory limitations. Utilizing government incentives and promoting collaborative partnerships with local and international stakeholders will be essential for maintaining export performance. Although the DMO policy has been very helpful in maintaining domestic market stability, a more all-encompassing strategy is required to avoid trade-offs between national interests and world competitiveness. Maintaining Indonesia's leadership in the world palm oil market and promoting sustainable development depends on constant policy review, improvement, and proactive industry player measures.

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