

Analysis of the Role of Export Risk Management and Financing Policy Effectiveness on the Competitiveness of the Agricultural Industry in Indonesia

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ABSTRACT

This study investigates the role of export risk management and financing policy effectiveness in enhancing the competitiveness of Indonesia's agricultural industry. Using a quantitative approach, data were collected from 120 respondents, including stakeholders in the agricultural export sector, through a structured questionnaire employing a five-point Likert scale. The data were analyzed using SPSS version 25, with results indicating that both export risk management and financing policy effectiveness have significant positive impacts on competitiveness. Export risk management emerged as the stronger predictor, highlighting the importance of proactive strategies in mitigating trade risks. The combined influence of these factors explains 67% of the variance in competitiveness, underscoring their synergistic effect. The findings emphasize the need for policymakers and industry leaders to prioritize integrated risk management frameworks and enhance access to sector-specific financing solutions to support sustainable growth in agricultural exports.

Keywords: *Export Risk Management, Financing Policy Effectiveness, Competitiveness, Agricultural Industry, Indonesia.*

1. INTRODUCTION

The agricultural industry plays a pivotal role in Indonesia's economy, significantly contributing to GDP, employment, and export revenue, as the country benefits from vast natural resources and a favorable climate that give it a competitive edge in agricultural production. Nevertheless, the complexities of global trade—such as export risks and financing policies—pose substantial challenges that impact the competitiveness of Indonesia's agricultural sector in international markets. Commodities like coffee, pepper, and palm oil exhibit strong competitiveness in the ASEAN region, as demonstrated by the Revealed Comparative Advantage (RCA) analysis, though tea and tobacco remain less competitive globally [1]. Over the past twenty years, Indonesian agricultural exports have achieved notable compound growth rates—8.78% in quantity and 12.33% in volume—but only a limited set of commodities maintain consistent comparative advantages, necessitating strategic promotion of these products [2]. While the sector holds a strategic position in the economy, it still faces significant barriers that require integrated economic development strategies to strengthen linkages between agriculture and related industries [3]. Furthermore, although agricultural exports bolster GDP growth, the direct influence appears limited, as it is the GDP growth itself that affects export, import, and investment values—indicating the importance of growth-stimulating policies for competitiveness [4]. On the global stage, Indonesia's role in the G-20 offers opportunities and hurdles, where it currently ranks ninth among agricultural exporters, highlighting the importance of focusing on both core commodities and the development of promising products in non-traditional markets to enhance its standing [5].

Export risks in the agricultural industry encompass various uncertainties, including price volatility, supply chain disruptions, market fluctuations, and regulatory changes, making effective

risk management strategies vital for maintaining operational stability and global competitiveness. Financial instruments such as grain options have proven effective in mitigating price volatility and stabilizing profitability for agricultural enterprises [6], while diversification strategies—spanning crop varieties and market reach—enhance financial resilience and reduce overdependence on a single commodity or destination [7]. The adoption of advanced precision technologies further supports risk mitigation by optimizing production efficiency and minimizing waste [7]. Additionally, the use of agricultural insurance and commodity hedging mechanisms offers protection against climate-related risks and unpredictable market movements [7]. On the policy front, the government's role is critical in fostering private markets for risk management, allowing tailored solutions to residual risks rather than relying solely on direct intervention [8]. Moreover, regulatory frameworks that decouple support from production and prices expose farmers to market dynamics, underlining the necessity for robust, proactive risk strategies [9]. Trade liberalization agreements such as NAFTA and GATT have expanded market access but simultaneously heightened competitive pressures, prompting the need for strategic adaptation by producers to sustain export viability [10]. Financing policies, therefore, must be aligned with these dynamics to equip agricultural businesses with adequate capital and tools for investment, innovation, and market expansion, directly influencing their global competitiveness.

Despite the strategic importance of Indonesia's agricultural sector, limited studies have explored the interplay between export risk management and financing policy effectiveness in enhancing its competitiveness, even though both elements are critical in addressing the challenges posed by global market dynamics, financial constraints, and policy shifts. Export risk management is vital for mitigating the impact of global market fluctuations such as commodity price volatility and exchange rate instability, with strategies like commodity hedging and crop diversification serving as key tools [7]. The integration of information technology, such as utilizing the Trademap website, also enhances trade strategies by offering insights into global market trends and minimizing business risks [11]. On the financing side, Indonesia's agricultural sector struggles with access to capital, as national banks allocate less than 6% of their credit portfolio to agriculture due to perceived high risks and complicated credit requirements [12]. Government efforts to increase funding allocations and introduce alternative financing schemes are therefore essential to bolster financial resilience in the sector [12].

Enhancing competitiveness further requires strategies like strengthening product branding, diversifying export markets, and improving product quality, as observed in commodities such as coffee [11]. Additionally, the decentralization of export gains in sectors like palm oil reveals the significant role of private actors in implementing these strategies for competitive advantage [13]. This study aims to bridge the existing research gap by examining how the interaction between risk management and financing policy influences competitiveness, offering empirical insights to inform policy development and strategic planning through a quantitative analysis of data collected from 120 agricultural export stakeholders.

2. LITERATURE REVIEW

2.1 Export Risk Management in the Agricultural Industry

Export risk management in agriculture involves identifying, assessing, and mitigating trade-related risks such as market volatility, logistical issues, regulatory shifts, and geopolitical instability. Given the perishability of goods and weather

dependency, exporters must adopt robust strategies. Risk assessments using trade agreement analysis and economic models help anticipate deviations [14], while geopolitical threats require adaptive supply chain strategies [15]. Mitigation includes market diversification, alternative logistics, insurance, and digital tools like blockchain and predictive analytics [15]. In Indonesia, government support through insurance and training is vital, though adoption remains limited [16]. Global shifts, such as China's export challenges outside Belt and Road countries, further highlight the importance of proactive risk management [17].

2.2 *Financing Policy Effectiveness*

Financing policies are essential for the growth and sustainability of agricultural exports, enabling investment in production, infrastructure, and market expansion. Their effectiveness depends on factors like interest rates, loan accessibility, and the suitability of financial products for agriculture's seasonal nature. Instruments such as export credits, trade financing, and supply chain financing help address liquidity issues and support long production cycles [18], [19]. Blended finance, combining public and private funds, can mobilize additional capital for sustainable agriculture by attracting private investment through development-oriented funding [20]. In Indonesia, initiatives from institutions like Bank Indonesia aim to support exporters, but issues such as bureaucracy, strict collateral demands, and limited reach to smallholders persist [21]. Credit constraints also remain a key barrier, requiring better understanding of lender-borrower dynamics and agriculture's financial structure [19].

2.3 *Competitiveness in the Agricultural Industry*

Competitiveness in the agricultural industry is a multifaceted concept involving the capacity to sustain and enhance market position while delivering value to stakeholders, influenced by factors such as innovation, cost leadership, differentiation, productivity, quality standards, and compliance with trade regulations. Innovation and differentiation are key to gaining competitive advantage, enabling firms to offer unique benefits or lower prices [22], while brand development and increased product visibility further strengthen market presence [23]. Enhancing productivity and adhering to quality standards, as seen in countries like Brazil and the Netherlands, are also critical for export success [24], with product structure optimization and quality improvement playing a vital role [23]. Effective export risk management helps firms adapt to market volatility and sustain profitability [25], and access to affordable financing supports export volume growth and market diversification, both essential for competitive positioning [25]. Moreover, technological adoption and robust infrastructure significantly impact production efficiency and market access, though in Indonesia, high logistics costs and regulatory inefficiencies continue to limit competitiveness despite advancements in technology [25].

2.4 *Research Gap*

While existing literature provides valuable insights into export risk management and financing policy effectiveness, limited research explores their combined impact on the competitiveness of Indonesia's agricultural industry. This study aims to address this gap by examining the interrelationships between these variables and their collective

influence on competitiveness, contributing to a more comprehensive understanding of the challenges and opportunities in this sector.

3. METHODS

The study adopts a quantitative research design to explore the relationships among export risk management, financing policy effectiveness, and competitiveness in Indonesia's agricultural industry. This approach systematically collects and analyzes numerical data to identify patterns, test hypotheses, and draw conclusions, making it appropriate for the study's objectives. The population comprises stakeholders in the agricultural export sector, including exporters, financial institutions, and policymakers. Using purposive sampling, 120 respondents with relevant expertise were selected, ensuring representation and reliability based on Krejcie and Morgan's (1970) recommendations. Primary data were collected through a structured questionnaire designed to assess perceptions of the key variables using a five-point Likert scale. The questionnaire was pretested for clarity and relevance, with feedback incorporated into its final version.

The study investigates three main variables: export risk management, financing policy effectiveness, and competitiveness. Export risk management measures the extent of strategies implemented to mitigate international trade risks, such as risk identification, assessment, and the use of mitigation tools like insurance and market diversification. Financing policy effectiveness evaluates the accessibility and adequacy of policies supporting agricultural exporters, considering export credits, loan processes, and alignment with sector needs. Competitiveness assesses the industry's ability to maintain and enhance its global market position, focusing on export growth, product quality, compliance with standards, and market diversification.

Data analysis was conducted using SPSS version 25, following a three-step process. Descriptive statistics summarized the sample characteristics and responses, while reliability and validity were assessed through Cronbach's alpha and factor analysis. Multiple regression analysis was employed to examine the relationships among the variables and test the hypotheses. This allowed for quantifying the impact of export risk management and financing policy effectiveness on industry competitiveness, providing valuable insights for policymakers and stakeholders.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics offer a detailed overview of the sample characteristics and respondents' perceptions of the key variables. The mean scores reveal a generally moderate to high level of engagement and effectiveness across the evaluated factors. Export risk management scored a mean of 3.72 with a standard deviation of 0.84, while financing policy effectiveness had a mean of 3.64 with a standard deviation of 0.89. Competitiveness achieved the highest mean score of 3.79, with a standard deviation of 0.82.

These findings suggest that stakeholders perceive the agricultural industry's export risk management practices and financing policies as moderately effective in supporting competitiveness. The scores reflect positive, albeit not optimal, engagement in mitigating trade risks, accessing financing, and maintaining a competitive market position. This underscores the need for continued efforts to enhance these critical areas to achieve sustained growth in the agricultural export sector.

4.2 Reliability and Validity

The reliability analysis using Cronbach's alpha confirmed the internal consistency of the questionnaire items, with all variables exceeding the acceptable threshold of 0.70. Specifically, export risk management achieved an alpha value of 0.811, financing policy effectiveness scored 0.834, and competitiveness obtained 0.807. These results indicate that the items used to measure each variable are reliable and consistent in capturing the intended constructs.

Additionally, factor analysis validated the construct validity of the questionnaire. All items loaded significantly onto their respective factors, confirming that the questionnaire effectively

measures the distinct dimensions of export risk management, financing policy effectiveness, and competitiveness. These findings underscore the robustness of the measurement instrument, ensuring that the study's results are based on valid and reliable data.

4.3 Regression Analysis

The results of the multiple regression analysis are summarized in Table 1:

Table 1. Hypothesis Testing

Predictor Variable	Beta Coefficient (β)	t-Statistic	p-Value
Export Risk Management	0.462	5.831	< 0.001
Financing Policy Effectiveness	0.378	4.976	< 0.001

The multiple regression analysis revealed that both export risk management and financing policy effectiveness significantly contribute to the competitiveness of Indonesia's agricultural industry. Export risk management demonstrated a stronger influence, with a beta coefficient (β) of 0.462, a t-statistic of 5.831, and a p-value of less than 0.001. Financing policy effectiveness also had a substantial positive impact, with a beta coefficient (β) of 0.378, a t-statistic of 4.976, and a p-value of less than 0.001. These findings indicate that both predictors are statistically significant and play crucial roles in enhancing industry competitiveness. The adjusted R^2 value was 0.67, indicating that 67% of the variance in competitiveness is explained by export risk management and financing policy effectiveness.

Discussion

1. The Role of Export Risk Management

The positive and significant relationship between export risk management and competitiveness highlights the importance of effective risk mitigation strategies. Respondents who reported higher levels of risk management practices, such as market diversification, insurance utilization, and proactive risk assessment, tended to experience greater competitiveness in global markets. These findings align with previous studies that emphasized the value of robust risk management frameworks in reducing exposure to trade uncertainties. In the Indonesian context, agricultural exporters who prioritize risk management are better equipped to adapt to external shocks, such as price volatility and logistical disruptions. This is further supported by various studies that underscore the importance of supply chain risk management (SCRM) and organizational agility in enhancing resilience and performance. Indonesia's agricultural supply chain is particularly vulnerable to risks like price fluctuations, supply-demand imbalances, and natural disasters, making effective risk management critical for market stability and food security [26], [27]. In specific cases like the red chili supply chain in East Java, proactive strategies—such as real-time supply chain tracking and weather early warning systems—have enhanced resilience against crop failures and market oversupply [28]. Moreover, the integration of SCRM with organizational agility significantly improves the performance of MSMEs, allowing them to swiftly adapt to environmental changes and maintain operational efficiency while driving innovation [29]. Financial strategies, including soft tolling and contract farming, also play a crucial role in mitigating risks in agricultural supply chains, ensuring profitability while engaging stakeholders in decision-making processes [27].

2. The Impact of Financing Policy Effectiveness

Financing policy effectiveness also demonstrated a significant positive effect on competitiveness, as respondents who perceived financing policies as accessible, affordable, and tailored to their needs reported higher levels of competitiveness. This finding supports prior studies emphasizing the critical role of financing in enabling exporters to invest in production capacity, infrastructure, and innovation. In Indonesia, financial development is essential for reducing export barriers such as funding limitations and shipping constraints; however, its impact remains limited

due to insufficient fund channeling to the exporter sector and persistent challenges in export activities [30]. Trade financing plays a vital role in shaping export flows, particularly in countries with more developed financial sectors, where it significantly enhances export performance [31]. Nonetheless, bureaucratic inefficiencies and limited outreach to small-scale farmers hinder the full realization of financing policy benefits. Smallholder farmers, in particular, face substantial financial constraints, including limited access to production and post-harvest credit, as well as inadequate formal savings facilities, which suppress productivity and income growth [32]. Policy responses should therefore focus not only on improving access to capital but also on addressing structural issues such as land tenure, especially through incentive policies targeting young farmers, alongside integrated agricultural programs and rural business diversification strategies to sustainably strengthen Indonesia's agricultural sector [33].

3. Policy and Industry Implications

The findings suggest several important implications for policymakers and industry stakeholders, particularly in enhancing the competitiveness of agricultural exporters. First, government agencies and industry associations should strengthen export risk management programs by providing training and resources to improve exporters' capacity to identify and mitigate potential risks. Second, financial institutions are encouraged to enhance financing accessibility by developing tailored financial products that address sector-specific challenges such as seasonal cash flows and stringent collateral requirements. Lastly, policymakers should foster synergistic strategies by integrating risk management support with financing initiatives, ensuring that the combined implementation of these efforts yields a greater impact on export competitiveness.

4. Limitations and Future Research

While this study provides valuable insights, it is subject to limitations, including its reliance on self-reported data and a sample size of 120 respondents. Future research could expand the sample size, incorporate longitudinal data, and explore additional variables, such as technological adoption and international partnerships, to provide a more comprehensive understanding of competitiveness in the agricultural sector.

CONCLUSION

This study highlights the critical role of export risk management and financing policy effectiveness in enhancing the competitiveness of Indonesia's agricultural industry. Effective risk management strategies—such as market diversification, insurance utilization, and proactive risk assessments—equip exporters to better navigate global market uncertainties, while accessible and tailored financing policies empower them to invest in innovation and improve production efficiency, thereby strengthening their market position. The combined impact of these factors reveals a synergistic effect, where integrated implementation delivers greater benefits than isolated efforts. Policymakers are thus encouraged to align risk management frameworks with targeted financing solutions, and industry stakeholders are urged to collaborate in addressing key challenges, including financing accessibility and capacity building. By prioritizing these strategies, Indonesia can foster sustainable growth and elevate the global competitiveness of its agricultural sector. Future research should expand the analytical scope to include additional determinants, such as technological advancements and international partnerships, to develop a more comprehensive understanding of the dynamics shaping industry competitiveness.

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