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Geopolitical Impact on The Availability and Price of Wheat for Importers in Indonesia

Agustino Mardiandi[1], Lira Agusinta[2], Mustika Sari[3], Muhammad Iqbal Firdaus[4], Librita Arifiani[5], Yulianti Keke[6]

[1]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, agustino_17@yahoo.com
[2]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, lir4agusinta@gmail.com
[3]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, mustika0017@gmail.com
[4]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, iqbal@itltrisakti.ac.id
[5]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, task.librita777@gmail.com
[6]Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia, yuliakeke@gmail.com

Corresponding Author: agustino_17@yahoo.com

Abstract: This study aims to analyze the impact of geopolitical conflicts on wheat availability and prices for importers in Indonesia, focusing on supply chain activities through the Cigading and Ciwandan Port areas in Cilegon, Banten. This research employed a qualitative approach with a descriptive design. Data were collected through in-depth interviews, observations, and documentation involving 12 informants selected using purposive sampling, representing actors involved in various stages of wheat procurement, trade, transportation, and distribution. Data analysis was conducted through data reduction, data presentation, conclusion drawing, and thematic categorization related to geopolitical conflicts, wheat availability, shipping routes, logistics costs, prices or landed costs, adaptation strategies, and coordination among supply chain actors. The findings indicate that the Russia–Ukraine conflict and geopolitical tensions in the Middle East do not directly cause the disappearance of wheat from the Indonesian market but increase uncertainty regarding supply continuity and delivery timeliness. Increased risks along trade routes encourage changes or diversions in shipping routes, resulting in longer lead times and greater uncertainty regarding arrival schedules. These conditions subsequently increase freight costs, fuel consumption, insurance costs, and war risk premiums, contributing to higher landed costs and wheat procurement expenses. Identified adaptation strategies include supplier diversification, increased safety stock or buffer stock, alternative shipping routes, adjustments to procurement and production schedules, digital technology utilization, and enhanced coordination and information exchange among supply chain actors. The study concludes that geopolitical impacts on wheat are transmitted through international transportation and logistics mechanisms, making supply chain resilience essential for maintaining supply continuity and controlling procurement costs. The findings emphasize the importance of balancing cost efficiency, flexibility, security, and supply reliability.

Keyword: Geopolitical Conflict, Wheat, Importers, Supply Chain, Shipping Routes, Landed Cost.

Indonesian Abstract: *Penelitian ini menganalisis dampak konflik geopolitik terhadap ketersediaan dan harga gandum bagi importir di Indonesia dengan fokus pada aktivitas rantai pasok melalui Pelabuhan Cigading dan Ciwandan di Cilegon, Banten. Penelitian menggunakan pendekatan kualitatif deskriptif. Data dikumpulkan melalui wawancara mendalam, observasi, dan dokumentasi terhadap 12 informan yang dipilih secara purposif serta mewakili berbagai tahapan pengadaan, perdagangan, pengangkutan, dan distribusi gandum. Data dianalisis melalui reduksi data, penyajian data, penarikan kesimpulan, dan kategorisasi tematik. Hasil penelitian menunjukkan bahwa konflik Rusia–Ukraina dan ketegangan geopolitik di Timur Tengah tidak secara langsung menyebabkan kelangkaan gandum di Indonesia, tetapi meningkatkan ketidakpastian kontinuitas pasokan dan jadwal pengiriman. Risiko pada jalur perdagangan internasional mendorong pengalihan rute, memperpanjang waktu pengiriman, dan meningkatkan ketidakpastian kedatangan. Kondisi tersebut meningkatkan biaya angkut, konsumsi bahan bakar, biaya asuransi, premi risiko perang, biaya pendaratan, dan biaya pengadaan. Strategi adaptasi meliputi diversifikasi pemasok, peningkatan persediaan pengaman, penggunaan rute alternatif, penyesuaian jadwal pengadaan dan produksi, pemanfaatan teknologi digital, serta penguatan koordinasi antarpelaku rantai pasok. Penelitian menyimpulkan bahwa dampak geopolitik ditransmisikan melalui mekanisme transportasi dan logistik internasional. Oleh karena itu, ketahanan rantai pasok diperlukan untuk menjaga kontinuitas pasokan serta menyeimbangkan efisiensi biaya, fleksibilitas, keamanan, dan keandalan.*

Keyword: *Konflik Geopolitik, Gandum, Importir, Rantai Pasok, Rute Pelayaran, Biaya Pendaratan.*

INTRODUCTION

The global wheat trade has become increasingly exposed to disruptions arising from geopolitical instability, international trade uncertainty, and growing interdependence within global supply chains. Wheat is one of the world's most strategic food commodities because it serves as a major raw material for flour, noodles, bread, biscuits, and various processed food products. In Indonesia, demand for wheat-based products continues to increase in line with population growth, urbanization, changing consumption patterns, and the expansion of the food-processing industry. However, Indonesia has very limited domestic wheat production capacity, causing national demand to be fulfilled predominantly through imports. This high dependence on external suppliers makes the availability and price of wheat in Indonesia highly sensitive to global production conditions, international trade policies, exchange-rate movements, transportation costs, and geopolitical developments (Ibrohim et al., 2025) Consequently, wheat supply security in Indonesia is not determined solely by domestic market conditions but is closely connected to the stability of international production and distribution networks.

These vulnerabilities have become increasingly evident as geopolitical conflicts disrupt major production regions and strategic maritime trade routes. The Russia–Ukraine conflict, in particular, has significantly affected agricultural production and export flows from the Black Sea region, which has historically represented a substantial share of global wheat trade. The disruption of production, port operations, and export activities in this region has contributed to higher food prices, greater market uncertainty, and increased volatility in global commodity markets. Hamzah et al., (2024) noted that the Black Sea region accounts for approximately 30% of global wheat trade, illustrating the systemic importance of this area for international food supply. Similarly, FAO, (2022) highlighted that the conflict has disrupted global wheat distribution and intensified uncertainty in international food markets. For importing countries such as Indonesia, these developments may increase procurement risks, constrain supply availability, and generate upward pressure on import costs.

Geopolitical tensions in the Middle East have created an additional source of disruption to the international logistics system. Security risks in the Red Sea and along the Suez Canal have forced many shipping companies to reroute vessels through the Cape of Good Hope, resulting in longer sailing distances, extended transit times, and increased operating costs. (Unctad, 2024) reported that such rerouting has increased maritime transportation costs, prolonged delivery times, and reduced global supply chain efficiency. These conditions are especially significant for Indonesia because wheat imports depend heavily on international maritime transportation. Disruptions along strategic shipping corridors may therefore translate into delayed cargo arrivals, higher freight rates, increasing marine insurance premiums, and greater uncertainty in supply planning. Li et al., (2025) further emphasized that disruptions in international shipping routes can significantly increase logistics costs through higher freight expenditures, insurance costs, and longer transit times.

From a supply chain management perspective, geopolitical conflict can be understood as an external disruption risk that affects the physical, informational, and financial flows of international trade. The consequences of such disruption do not stop at the level of global trade volumes but are transmitted through operational mechanisms within the supply chain. Changes in shipping routes, longer lead times, higher freight charges, increased fuel consumption, higher insurance premiums, and war-risk costs may directly affect the cost and reliability of imported commodities. Baldwin & Freeman, (2022) demonstrated that global supply chain disruptions may increase transportation costs and subsequently place pressure on commodity prices, while Haloho, (2024) emphasized that disruptions in international transportation routes can reduce distribution efficiency, extend delivery lead times, and increase uncertainty in supply availability. In the context of wheat imports, these effects may encourage importers to revise procurement schedules, increase safety-stock levels, diversify supply sources, or absorb higher landed costs in order to maintain continuity of supply.

Accordingly, the relationship between geopolitical conflict and wheat-market outcomes should not be interpreted as a simple direct relationship. Rather, geopolitical instability may influence wheat availability and prices through a sequence of logistical and supply-chain transmission mechanisms. Conflict in major producing regions can disrupt production and exports, while conflict along maritime corridors can alter shipping routes and transportation patterns. These changes may increase transit time, freight costs, marine insurance expenses, and war-risk premiums, which in turn affect import lead times, procurement costs, and supply reliability. In this study, therefore, changes in shipping routes and logistics costs are positioned as intermediate mechanisms that explain how geopolitical disruptions are transmitted into changes in wheat availability and prices for Indonesian importers. This perspective provides a more operational understanding of geopolitical risk by connecting macro-level conflict with firm-level supply-chain consequences.

Previous studies have widely acknowledged that geopolitical instability can affect food security, international trade, commodity prices, and global supply chains. Taheri Hosseinkhani, (2025), for example, found that disruptions to global trade can generate food-price fluctuations and increase supply instability for food-importing countries. Other studies have demonstrated that geopolitical conflict can affect agricultural exports, maritime transportation, supply-chain reliability, and logistics costs. Nevertheless, much of the existing literature has focused on macroeconomic impacts, international trade performance, global food-price movements, or the general resilience of international supply chains. Comparatively limited attention has been given to how geopolitical disruptions are experienced by importers at the operational level, particularly through changes in shipping routes, lead times, freight costs, insurance costs, and procurement decisions.

Several research gaps therefore remain. First, existing studies have predominantly examined geopolitical conflict from a macroeconomic or global trade perspective, whereas limited empirical research has investigated its specific implications for wheat importers in Indonesia. Second, previous studies have generally examined food-price volatility, trade disruption, maritime-route changes, or logistics costs separately, resulting in limited understanding of how these factors interact as an integrated transmission mechanism from geopolitical conflict to commodity availability and import prices. Third, empirical evidence regarding the adaptation and mitigation strategies undertaken by importers, shipping companies, logistics providers, and wheat-using industries in Indonesia remains limited. These gaps are particularly important because Indonesia's high dependence on imported wheat creates a structural exposure to external disruptions that cannot be fully managed through domestic production adjustments.

Building on these research gaps, this study proposes an integrated analytical perspective to explain how global geopolitical conflicts affect wheat availability and prices for importers in Indonesia. Unlike studies that primarily examine geopolitical risk at the macroeconomic level, this research emphasizes the operational supply-chain process through which geopolitical disruptions are transmitted to importing firms. The study simultaneously considers changes in shipping routes, lead times, freight rates, marine insurance costs, war-risk premiums, and other logistics expenses as intermediate mechanisms, while also examining the adaptive responses of relevant supply-chain actors. By integrating geopolitical risk with supply-chain disruption and logistics-cost mechanisms, the study is expected to provide a more comprehensive explanation of how external geopolitical shocks influence the reliability and cost of wheat imports.

Based on these considerations, this study aims to analyze the impact of global geopolitical conflicts, particularly the Russia–Ukraine conflict and tensions in the Middle East, on wheat availability and prices for importers in Indonesia. It further examines how changes in shipping routes, lead times, freight rates, insurance costs, and other logistics expenses mediate the transmission of geopolitical disruptions into supply and price outcomes, while identifying the adaptation and mitigation strategies implemented by importers, shipping companies, logistics providers, and wheat-using industries. Empirically, the study focuses on Cigading Port and Ciwandan Port in Cilegon, Banten, which were purposively selected because of their relevance to dry-bulk commodity flows and their role as logistics gateways supporting industrial activities in the surrounding region. By examining the issue from the perspective of actors directly exposed to international trade and transportation disruptions, this research is expected to contribute to the literature on geopolitical supply-chain risk while providing practical insights for strengthening wheat procurement resilience and supply continuity in Indonesia.

METHOD

This study adopts a qualitative descriptive research design to examine the impact of global geopolitical conflicts on wheat availability and prices for importers in Indonesia, particularly through changes in shipping routes and logistics costs. The study was conducted in Cilegon, Banten, focusing on Cigading Port, Ciwandan Port, and relevant wheat-processing industries. Informants were selected through purposive sampling, involving 12 participants consisting of wheat importers, shipping companies or freight forwarders, flour-based food industries, and academics or logistics and supply chain analysts with direct knowledge and experience related to wheat imports and supply chain activities. Data were collected through semi-structured in-depth interviews, direct field observation, Focus Group Discussion (FGD), and documentation, supported by company documents, logistics reports, wheat import data, shipping schedules, and relevant scientific publications.

The data were analyzed qualitatively using the Miles and Huberman interactive model, consisting of data reduction, data display, and conclusion drawing or verification, complemented by source, technique, and time triangulation to strengthen the credibility and consistency of the findings. Qualitative data were further analyzed using NVivo 15 through systematic coding, node development, thematic classification, and interpretation to identify key patterns and relationships related to wheat availability, shipping routes, logistics costs, wheat prices, adaptation, and mitigation strategies in response to geopolitical disruptions.

RESULTS AND DISCUSSION

Results

This study examines how global geopolitical conflicts, particularly the Russia–Ukraine war and tensions in the Middle East, affect wheat availability and procurement costs for importers in Indonesia. The study focuses on shipping-route changes, lead times, freight rates, insurance, fuel costs, and war-risk premiums as transmission mechanisms linking geopolitical disruptions to wheat supply and landed costs.

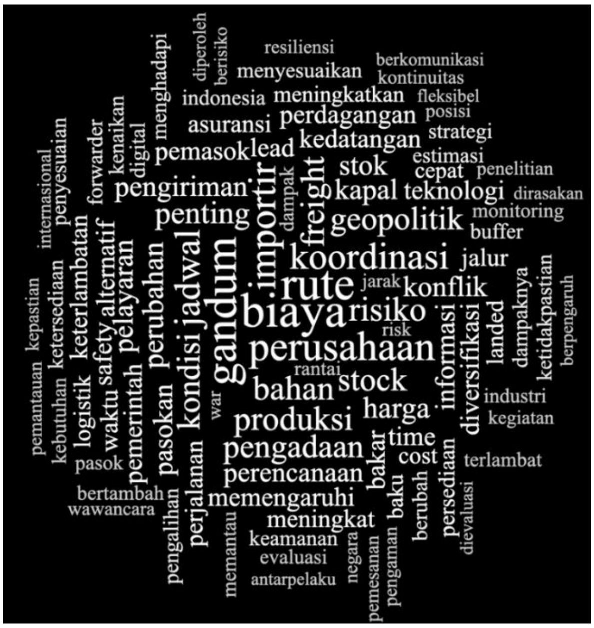
The research was conducted around Cigading Port and Ciwandan Port in Cilegon, Banten, locations that are relevant to dry-bulk cargo reception and industrial distribution activities. Data were collected through in-depth interviews, field observation, focus group discussions, and documentation. Twelve purposively selected informants represented four stakeholder groups: wheat importers, shipping companies/freight forwarders, flour-based food industries, and logistics or supply-chain academics/analysts. This composition enabled the findings to be examined from upstream procurement, transport, industrial-use, and analytical perspectives rather than from a single actor's viewpoint.

Table 1. Composition of Research Informants

Stakeholder group	Number	Informant codes
Wheat importers	5	I-01 to I-05
Shipping companies / freight forwarders	3	I-06 to I-08
Flour-based food industries	2	I-09 to I-10
Logistics and supply-chain academics/analysts	2	I-11 to I-12
Total	12	-

Source: research data

Interview transcripts and supporting materials were analyzed using NVivo 15 through coding, category grouping, and thematic comparison. The coding process identified a consistent set of themes around geopolitical disruption, wheat availability, shipping routes, logistics costs, landed cost, adaptation, and mitigation. The coding summary indicates that adaptation generated the highest number of references, while shipping routes had the broadest source coverage. This pattern is important because it suggests that informants did not discuss geopolitical conflict as an isolated macro-level event; they repeatedly connected it to operational responses and transport decisions.



Source: NVivo 15 analysis of interview data

Figure 1. Word cloud

The Word Cloud indicates that the interview discussions were primarily centered on the relationship between geopolitical conditions and wheat supply-chain activities. Prominent terms such as *cost, company, coordination, geopolitics, wheat, route, procurement, production, shipment, freight, risk, stock,* and *supplier* show that respondents emphasized the effects of geopolitical uncertainty on transportation, procurement, inventory management, and overall wheat supply-chain operations.

Table 2. NVivo 15 Coding Summary

Theme	Sources	References	Interpretation
Adaptation	9	21	Most frequently referenced theme
Shipping routes	10	20	Widest informant coverage
Wheat availability	9	15	Strong concern with supply continuity
Logistics costs	6	14	Cost consequences of route/risk changes
Mitigation	5	9	Risk-control and coordination measures
Wheat price / landed cost	6	7	Mostly discussed as a downstream cost effect

Source: NVivo 15 analysis of interview data

Based on the NVivo 15 analysis, six major themes emerged from the interview data: Adaptation, Shipping Routes, Wheat Availability, Logistics Costs, Mitigation, and Wheat Prices. These themes illustrate how geopolitical disruptions affect wheat supply chains in Indonesia and how industry actors respond to the resulting uncertainty.

Adaptation was the most frequently discussed theme, with 21 references from 9 sources, indicating that companies actively adjust procurement strategies, inventory management, supplier diversification, and operational activities to maintain supply continuity. Shipping Routes recorded the highest number of sources, with 10 sources and 20 references, showing that route changes are widely recognized as an important consequence of geopolitical instability. Changes in international security conditions may lead to route diversions, longer transit times, and uncertainty in vessel arrival schedules.

Wheat Availability generated 15 references from 9 sources, highlighting concerns regarding supply continuity, delivery delays, and the reliability of wheat availability for industrial operations. Meanwhile, Logistics Costs recorded 14 references from 6 sources. These costs include freight rates, fuel expenses, insurance, and other additional costs arising from increased transportation risks and longer shipping routes.

The Mitigation theme, with 9 references from 5 sources, reflects efforts to reduce geopolitical supply-chain risks through stakeholder coordination, risk monitoring, supplier and route diversification, procurement adjustments, and inventory management. Wheat Prices, with 7 references from 6 sources, received the lowest number of references. This indicates that informants tended to focus more on the mechanisms that influence wheat prices—particularly logistics costs, procurement costs, and landed costs—rather than discussing price changes directly.

Thus, the analysis of the NVivo 15 results reveals strong interconnections among the four research focuses. RQ1 highlights the impact on the continuity and assured availability of wheat. RQ2 illustrates cost implications arising from increased logistics components and landed costs. RQ3 delineates the mechanisms—involving route changes, lead times, and logistics costs—that link geopolitical risk to the supply chain. Meanwhile, RQ4 outlines stakeholder responses, including supplier diversification, safety stock maintenance, schedule adjustments, digital technology adoption, coordination, and mitigation efforts. Consequently, the NVivo 15 visualizations reinforce the finding that supply chain resilience is a critical factor in addressing geopolitical threats. Business stakeholders are required not only to source wheat cost-efficiently but also to ensure supply continuity through flexible adaptation and mitigation strategies.

1. Impact of Geopolitical Conflict on Wheat Availability

The findings show that geopolitical conflicts affect wheat availability in Indonesia mainly by increasing uncertainty in international transportation and shipment reliability. The impact is not necessarily reflected in a complete disruption of wheat supply, but rather in route adjustments, longer lead times, less predictable vessel schedules, and a higher risk of shipment delays. These conditions make procurement planning more difficult because importers cannot rely solely on previously established delivery schedules.

For wheat importers, availability therefore depends not only on whether wheat can be sourced from international markets, but also on whether it can arrive in Indonesia in the required quantity and within the planned time. In response to this uncertainty, importers tend to place orders earlier, revise procurement schedules, and maintain higher safety or buffer stocks to reduce the risk of raw-material shortages. This finding indicates that geopolitical disruption weakens the reliability and predictability of wheat flows even when the commodity remains physically available in exporting countries.

2. Impact of Geopolitical Conflict on Wheat Procurement Costs

The results indicate that geopolitical instability increases wheat procurement costs through higher freight, fuel, insurance, and war risk premiums. When shipping companies divert vessels to safer or alternative routes, sailing distance and voyage duration increase. Longer voyages require greater fuel consumption and may increase vessel operating expenses, while higher security risks may also raise insurance and risk-related charges.

These additional logistics costs are ultimately reflected in the landed cost borne by Indonesian wheat importers. Therefore, the financial impact of geopolitical conflict is not determined solely by fluctuations in international wheat commodity prices. Even when global wheat prices remain relatively stable, importers may still experience higher procurement costs because of increased transportation and security-related expenses. This finding highlights the importance of distinguishing between the market price of wheat and the total cost of bringing wheat from the exporting country to Indonesia.

3. Shipping Routes and Logistics Costs as Transmission Mechanisms

The study identifies shipping-route changes and logistics costs as intermediate transmission mechanisms linking geopolitical conflict with wheat availability and procurement costs. In this mechanism, geopolitical tension first increases security and operational risks along international trade routes. Shipping companies then evaluate and, when necessary, adjust vessel routes to maintain safety and service continuity.

These route changes create two major consequences. First, longer sailing distances and extended lead times increase uncertainty regarding vessel arrival schedules and reduce the reliability of supply. Second, longer voyages and higher security risks increase freight, fuel, insurance, and war risk costs, which subsequently raise the landed cost of imported wheat. Therefore, geopolitical shocks are transmitted through both a time-related channel, which affects supply availability, and a cost-related channel, which affects procurement expenditure. This finding confirms that shipping and logistics play a central role in transmitting geopolitical risks into Indonesia's wheat supply chain.

4. Adaptation and Mitigation Strategies of Wheat Supply Chain Actors

The main adaptation strategies identified in the study include supplier diversification, higher safety stocks, alternative shipping routes, procurement and production schedule adjustments, digital shipment monitoring, and stronger coordination among supply chain actors. Wheat importers primarily respond by reducing dependence on a single supplier country, placing orders earlier, and increasing buffer stocks to protect operations from shipment delays.

Shipping companies and freight forwarders strengthen route flexibility by periodically evaluating transport corridors, selecting alternative routes when risk levels increase, and using digital monitoring to improve shipment visibility. Meanwhile, flour-based food industries adjust production schedules and raw-material inventories according to expected wheat arrival times. These strategies show that resilience cannot be achieved through a single action, but through a combination of sourcing flexibility, inventory protection, transportation adaptability, information visibility, and coordination among supply chain actors. Together, these measures help maintain supply continuity and reduce operational exposure to geopolitical disruptions.

Table 3. Summary of Data Reduction and Key Findings by Research Question

Research Question	Research Focus	Key Themes Identified	Main Empirical Findings
RQ1	Wheat Availability	Supply uncertainty, shipment delays, schedule changes, extended lead time, and safety stock.	Geopolitical disruptions increase uncertainty in wheat arrivals and extend delivery lead times, requiring importers to adjust procurement schedules and maintain higher safety stocks.
RQ2	Wheat Procurement Cost	Freight cost, fuel cost, insurance, war risk premium, landed cost, and procurement expenditure.	Route diversions and higher transportation risks increase freight, fuel, insurance, and war risk premiums, resulting in higher landed costs and overall wheat procurement expenditures.
RQ3	Transmission Mechanism	Geopolitical conflict, route adjustment, lead time, logistics cost, wheat availability, and procurement cost.	Geopolitical risk is transmitted through shipping-route adjustments and longer lead times, which increase logistics costs and affect both wheat supply reliability and procurement costs.
RQ4	Adaptation and Mitigation Strategies	Supplier diversification, buffer stock, alternative routes, digital monitoring,	Supply-chain actors respond through supplier diversification, higher buffer stocks, alternative

Research Question	Research Focus	Key Themes Identified	Main Empirical Findings
		production adjustment, and coordination.	shipping routes, digital shipment monitoring, procurement and production adjustments, and stronger stakeholder coordination.

Source: research data

Discussions

1. How do geopolitical conflicts in the Black Sea region (Russia-Ukraine) and the Middle East affect international trade routes, particularly regarding wheat supply chains to Indonesia?

The findings indicate that global geopolitical conflicts, particularly the Russia–Ukraine war and tensions in the Middle East, affect wheat availability for Indonesian importers primarily by increasing supply chain uncertainty rather than causing an absolute shortage in the global market. Disruptions to international trade routes lead to shipping-route adjustments, longer lead times, uncertain vessel arrivals, and delivery delays. These conditions reduce the reliability and continuity of wheat supply and require importers to place orders earlier and maintain higher safety or buffer stocks.

From a supply chain perspective, geopolitical conflict acts as an external disruption that is transmitted through transportation and logistics systems. Route changes and extended transit times create cascading effects on inventory planning and downstream flour-based industries. Therefore, wheat availability in Indonesia depends not only on supply at the exporting country but also on the resilience of international logistics networks in ensuring timely, continuous, and reliable delivery.

2. How does the geopolitical conflict affect the price of wheat that importers in Indonesia have to pay?

The findings indicate that geopolitical conflicts affect wheat procurement costs for Indonesian importers primarily through increases in logistics-related landed costs rather than solely through changes in global wheat prices. Shipping-route diversions caused by heightened security risks increase sailing distance and lead times, which in turn raise freight, fuel, insurance, and war-risk premium costs. These additional expenses accumulate along the supply chain and increase the total cost of importing wheat into Indonesia.

This study therefore identifies a cost-push transmission mechanism in which geopolitical disruption increases shipping risks, triggers route adjustments, raises logistics costs, and ultimately increases wheat landed costs. The findings extend previous studies focused on global wheat prices by demonstrating that logistics disruptions are an important mechanism through which geopolitical conflicts influence procurement costs and may subsequently affect downstream flour-based industries.

3. How do changes in shipping routes, lead times, freight, insurance costs, and other logistics costs serve as intermediate mechanisms that explain the impact of geopolitical conflict on wheat availability and prices?

The findings show that changes in shipping routes and logistics costs function as intermediate mechanisms through which geopolitical conflicts affect wheat availability and procurement costs in Indonesia. Increased geopolitical risks encourage shipping companies to reroute vessels, resulting in longer distances and lead times, higher fuel consumption, freight rates, insurance costs, and war-risk premiums. These effects are subsequently transmitted to importers through greater supply uncertainty and higher landed costs.

Thus, geopolitical conflicts do not directly alter wheat conditions in Indonesia but operate through international transportation and logistics networks. Longer lead times and uncertain arrivals affect supply continuity and inventory planning, while higher transportation and risk-related costs increase wheat procurement expenses. This confirms the role of shipping routes and logistics costs as key transmission channels linking geopolitical disruption to wheat availability and prices.

Table 4. Research Questions, Key Findings, and Interpretation

RQ	Research Question	Key Findings	Interpretation
RQ1	How do global geopolitical conflicts affect wheat availability for importers in Indonesia?	The Russia–Ukraine conflict and Middle East tensions disrupted international trade routes, triggered shipping-route diversions, extended lead times, increased arrival uncertainty, delayed supply, and increased the need for safety or buffer stocks.	Geopolitical conflicts primarily increase uncertainty in supply continuity rather than causing an absolute shortage. Importers respond through earlier procurement and higher safety stocks.
RQ2	How do global geopolitical conflicts affect wheat prices for importers in Indonesia?	Higher freight, fuel, insurance, war-risk premiums, and other logistics costs increased wheat landed costs and placed additional pressure on downstream flour-based industries.	Procurement costs are influenced not only by global wheat prices but also by higher logistics and risk-related costs.
RQ3	How do shipping-route changes and logistics costs mediate the relationship between geopolitical conflicts and wheat availability and prices?	Higher geopolitical risk leads to route diversion, longer sailing distances and lead times, and higher fuel, freight, insurance, and war-risk costs, ultimately increasing landed costs and supply uncertainty.	Shipping routes and logistics costs act as transmission mechanisms linking geopolitical disruptions to wheat availability and procurement costs in Indonesia.
RQ4	What adaptation and mitigation strategies are adopted by wheat supply-chain actors in response to geopolitical conflicts?	Key responses include supplier diversification, higher safety stocks, alternative routes, procurement and production adjustments, digital shipment monitoring, and stronger stakeholder coordination.	These strategies indicate a shift toward greater supply-chain resilience, flexibility, and risk preparedness.
Synthesis	Overall findings	Geopolitical conflicts affect wheat supply chains through trade-route disruption, route diversion, longer lead times, arrival uncertainty, and higher logistics costs.	Geopolitical conflict acts as the trigger, shipping routes and logistics costs as transmission mechanisms, and wheat availability and procurement costs as the main outcomes.

Source: Research data

CONCLUSION

This study concludes that geopolitical conflicts affect wheat availability and procurement costs for importers in Indonesia primarily through disruptions in international transportation and logistics. The Russia–Ukraine conflict and tensions in the Middle East increase trade-route risks, leading to route adjustments, longer lead times, uncertain vessel arrivals, and higher freight, fuel, insurance, and war-risk costs. As a result, wheat availability is influenced not only by physical supply but also by the continuity, timeliness, and reliability of the supply chain, while procurement costs are increasingly shaped by higher landed costs.

In response, supply chain actors have shifted from a cost-efficiency orientation toward greater resilience through supplier diversification, higher safety stocks, alternative shipping routes, procurement and production adjustments, digital technology, and stronger coordination. These findings indicate that effective management of geopolitical disruptions requires a balance between efficiency, flexibility, security, and continuity of supply to maintain wheat availability and control logistics-related cost pressures in Indonesia.

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