



THE WEST ASIA CONFLICT AND ITS IMPACT ON MARITIME AFFAIRS: A GEOPOLITICAL AND BLUE ECONOMY ANALYSIS OF THE RED SEA, STRAIT OF HORMUZ, AND SUEZ CANAL

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Abstract Ongoing geopolitical tensions in West Asia, particularly across the Strait of Hormuz, the Suez Canal, and the Red Sea, pose a systemic threat to global maritime stability. Through a systematic qualitative content analysis of institutional reports, geopolitical literature, and ocean economy studies, this paper examines how hybrid warfare and asymmetric threats disrupt global shipping operations, inflate logistics costs, alter commercial transit routes, increase carbon emissions, and threaten the broader blue economy. The empirical findings indicate that rerouting commercial vessels around the Cape of Good Hope increases transit times by 10 to 14 days, driving spot freight rates up by 150 percent to 200 percent, while simultaneously boosting bunker fuel consumption and greenhouse gas emissions by up to 35 percent per voyage. Furthermore, war risk insurance premiums imposed by international underwriters spike vessel operating costs by an additional 0.5 percent to 1.0 percent of total vessel valuation per crossing. By integrating Neoclassical Realism with World Systems Theory, the study illustrates how localized asymmetric conflict in semi-peripheral maritime corridors triggers structural supply chain shocks across core economic hubs. Ultimately, the paper synthesises these findings into a comprehensive maritime resilience framework that highlights advanced technological integration, multilateral naval coordination, multimodal infrastructure, and sustainable ocean governance.

Keywords: West Asia Conflict, Maritime Security, Blue Economy, Supply Chain Resilience, Shipping Geopolitics

Abstrak Ketegangan geopolitik yang berterusan di Asia Barat, khususnya di Selat Hormuz, Terusan Suez, dan Laut Merah, menimbulkan ancaman sistemik terhadap kestabilan maritim global. Menerusi analisis kandungan kualitatif yang sistematik terhadap laporan institusi, literatur geopolitik, dan kajian ekonomi lautan, kertas kerja ini mengkaji bagaimana peperangan hibrid dan ancaman asimetri mengganggu operasi perkapalan global, melonjakkan kos logistik, mengubah laluan transit komersial, meningkatkan emisi karbon, dan mengancam ekonomi biru yang lebih luas. Dapatan empirikal menunjukkan bahawa pengubahan laluan kapal komersial mengelilingi *Cape of Good Hope* meningkatkan masa transit sebanyak 10 hingga 14 hari, melonjakkan kadar tambang spot sebanyak 150 peratus hingga 200 peratus di



samping meningkatkan penggunaan bahan api bunker dan pelepasan gas rumah hijau sehingga 35 peratus bagi setiap pelayaran. Selain itu, premium insurans risiko perang yang dikenakan oleh penanggung insurans antarabangsa melonjakkan kos operasi kapal sebanyak tambahan 0.5 peratus hingga 1.0 peratus daripada jumlah penilaian kapal bagi setiap lintasan. Dengan mengintegrasikan Realisme Neoklasik bersama Teori Sistem Dunia, kajian ini menggambarkan bagaimana konflik asimetri setempat di koridor maritim semi-periferi mencetuskan kejutan struktur rantai bekalan merentasi hab-hab ekonomi teras. Akhirnya, kertas kerja ini mensintesis dapatan kajian kepada satu rangka kerja ketahanan maritim yang komprehensif yang menekankan integrasi teknologi maju, koordinasi tentera laut pelbagai hala, infrastruktur pelbagai mod, dan tadbir urus lautan yang mampan.

Kata Kunci: Konflik Asia Barat, Keselamatan maritim, Ekonomi biru, Ketahanan rantai bekalan, Geopolitik perkapalan

INTRODUCTION

The contemporary global economy is fundamentally reliant on the maritime transport industry, which moves over 80 percent of global trade by volume and accounts for more than 70 percent of its total economic value (UNCTAD, 2024; World Bank, 2024). Because international trade relies on sea lines of communication, the operational stability of strategic maritime corridors is a necessary prerequisite for global macro-economic security. In this global network, West Asia functions as a critical geostrategic bridge connecting the major commercial and manufacturing hubs of Asia, Europe, and Africa through three pivotal maritime chokepoints: the Strait of Hormuz, the Suez Canal, and the Bab al-Mandab Strait (EIA, 2023). The Strait of Hormuz serves as the world's primary energy artery, conveying approximately 21 percent of daily global petroleum liquid consumption (EIA, 2023). Concurrently, the Suez Canal and the Bab al-Mandab Strait facilitate roughly 12 percent of total international trade volume, serving as the premier maritime channel for containerised cargo moving between East Asian production centres and European consumer markets (UNCTAD, 2024).

Recent geopolitical escalation and maritime security disruptions initiated by non-state actors utilizing asymmetric warfare have forced commercial maritime operators to bypass key chokepoints (International Chamber of Shipping, 2024). Consequently, international shipping lines are experiencing severe financial, operational, and environmental strain. This article presents an in-depth analysis across three interconnected dimensions: cost inflation, spatial route diversions, and the structural evolution of maritime security paradigms. Furthermore, it evaluates the broader consequences of these disruptions for the sustainable ocean economy, commonly referred to as the Blue Economy, which emphasises the sustainable use of ocean resources alongside marine environmental preservation.

Hence, the central objective of this study is to examine the structural relationship between geopolitical instability in West Asia and the overall sustainability of the global maritime industry. The first specific objective evaluates the strategic importance and physical trade volumes passing through the Strait of Hormuz, the Suez Canal, and the Bab al-Mandab Strait. The second objective quantifies financial and operational escalations, including bunker fuel costs, war risk insurance, and schedule delays, while assessing qualitative impacts on seafarer welfare and Just-In-Time manufacturing networks. The third objective assesses industry mitigation strategies, ranging from naval escorts to artificial intelligence-based threat



tracking. The fourth objective analyses how these operational disruptions affect the Blue Economy and sustainable marine governance frameworks.

Theoretical and Empirical Foundation

The academic literature emphasises the maritime transport sector's sensitivity to external geopolitical shocks. Stopford (2023) shows that ship supply is inelastic in the short term because naval construction has long lead times, so sudden geopolitical disruptions in narrow straits trigger immediate spikes in global freight rates. UNCTAD (2024) builds on this finding, noting that modern supply chains operate on lean Just-In-Time principles with minimal buffer capacity, thereby converting short-term transit delays into widespread industrial inventory shortages.

In geopolitical analysis, Al-Hajri (2024) identifies a permanent "geopolitical risk premium" embedded in global crude oil pricing formulas, driven by recurring threats to navigation in the Strait of Hormuz. Rodrigue (2024) introduces the concept of the "economics of diversion," illustrating that bypassing the Suez Canal via the Cape of Good Hope ties up billions of dollars in "floating capital" at sea, which restricts ship availability and drives up final retail prices. Furthermore, official reports from the International Maritime Organization (IMO, 2024) emphasise that elevated sailing speeds and extended transit distances dramatically increase fuel burn, thereby undermining global decarbonisation targets and causing marine environmental degradation.

Theoretical Framework

To explain these dynamics, the study combines Neoclassical Realism (Mearsheimer, 2018; Rose, 1998) and World Systems Theory (Wallerstein, 2004). Neoclassical Realism posits that state and non-state actors manipulate strategic maritime geography and chokepoints as instruments of coercive diplomacy and power projection in an anarchic international system (Rose, 1998).

Under this framework, asymmetric attacks on commercial shipping are deliberate strategies designed to exert geopolitical pressure on international rivals (Mearsheimer, 2018). World Systems Theory provides the macro-economic complement, viewing the global economy as an interconnected network in which disruptions in a semi-peripheral transit corridor such as West Asia propagate outward, disrupting capital accumulation and trade flows in core consumer markets (Wallerstein, 2004). Figure 1 illustrates the synthesis between Neoclassical Realism (geopolitical cause at the micro-political dynamics level) and World Systems Theory (economic effect at the macro-structural dynamics level), integrated into the Integrated Resilience Framework.

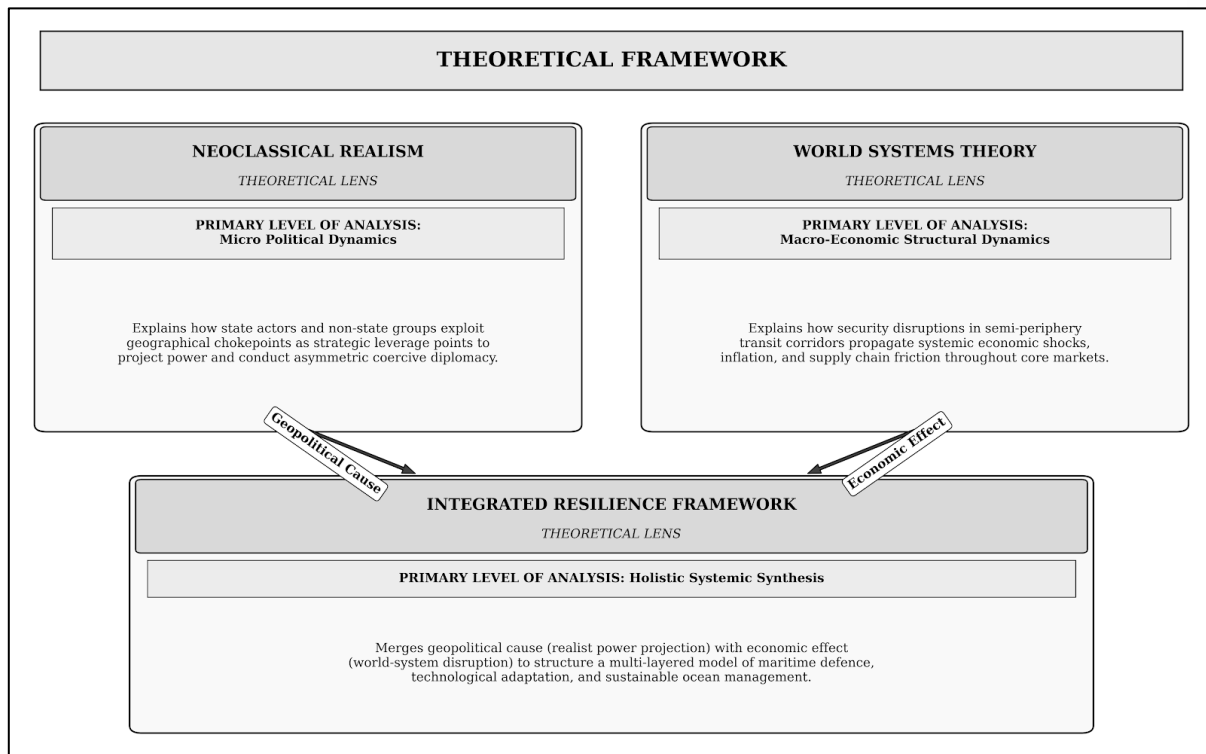
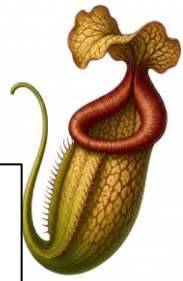


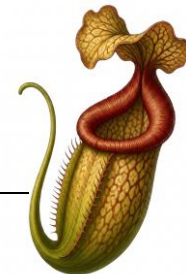
Figure 1
Theoretical Framework

METHOD AND MATERIALS

To establish analytical rigour, this study employs a systematic qualitative content analysis to examine secondary data from authoritative international sources. Primary secondary data were selected using explicit inclusion criteria that prioritised official publications from international maritime bodies such as the United Nations Conference on Trade and Development (UNCTAD, 2024), the International Maritime Organization (IMO, 2024), and the U.S. Energy Information Administration (EIA, 2023). Additionally, risk evaluations from key industry associations, including the International Chamber of Shipping (ICS, 2024) and the Lloyd's Market Association Joint War Committee (LMA/IUA, 2024), were synthesised alongside peer-reviewed academic literature in maritime economics (Stopford, 2023) and international relations (Rose, 1998). Data points were extracted, coded into thematic nodes, and cross-verified across independent databases to ensure data integrity as follows:

Table 1
Methodology Phase

Methodology Phase	Primary Analytical Action	Detailed Procedural Execution
Phase 1: Literature & Data Selection	Structured Data Harvesting & Screening	Secondary data were gathered using explicit inclusion criteria focusing on official publications from UNCTAD (2024), IMO (2024), EIA (2023), ICS (2024), and LMA/IUA (2024). Documents were screened for direct relevance to the West Asian crisis, specific chokepoints (Strait of Hormuz, Suez Canal, Bab al-Mandab), and quantifiable economic or environmental metrics.



Methodology Phase	Primary Analytical Action	Detailed Procedural Execution
Phase 2: Thematic Coding Process	Systematic Node Extraction	Textual data underwent open coding to identify recurring empirical indicators such as war risk premiums, Cape of Good Hope detours, and fuel emissions. Axial coding subsequently categorized these indicators into three primary thematic nodes: Cost & Insurance Volatility, Spatial & Route Diversion, and Security & Asymmetric Vulnerability.
Phase 3: Comparative Analysis & Triangulation	Empirical Cross-Verification	Data points were cross-checked across independent sources, such as comparing UNCTAD (2024) freight rate adjustments against Rodrigue (2024) transit distance calculations and EIA (2023) oil flow figures. A twin-impact analysis evaluated quantitative metrics (150%–200% fare hikes, +10–14 transit days, +35% emissions) alongside qualitative factors like crew welfare and Just-In-Time supply chain friction.
Phase 4: Theoretical Synthesis & Model Building	Conceptual Integration	Empirical findings were mapped onto Neoclassical Realism (Rose, 1998) and World Systems Theory (Wallerstein, 2004) to explain how localized asymmetric actions yield global macro-economic disruptions. This synthesis produced an integrated Maritime Resilience and Blue Economy Framework incorporating defence, technology, and ocean governance.

Despite the analytical rigour of this structured approach, reliance on secondary institutional data introduces methodological limitations. Reporting lags and variations in statistical estimation models across international maritime agencies can lead to minor discrepancies in real-time figures. Nevertheless, the cross-verification process provides a reliable foundation for evaluating the major structural challenges facing the global shipping sector. The industry's fundamental operational issues centre on three acute vulnerabilities.

First, insurance volatility creates financial instability. When the Joint War Committee designates maritime corridors such as the Red Sea or the Gulf of Oman as High-Risk Areas (HRA), underwriters levy additional war risk insurance premiums ranging from 0.5 percent to 1.0 percent of total ship valuation per transit (LMA/IUA, 2024). For a modern container vessel valued at \$150 million, this single surcharge adds \$1.5 million in operational expenditure per crossing (LAM/IUA, 2024).

Second, the route dilemma presents a trade-off between physical safety and economic efficiency. Rerouting vessels around the Cape of Good Hope adds roughly 3,500 nautical miles to a typical Asia-Europe voyage, extending duration by 10 to 14 days and severely disrupting ship turnaround times (Rodrigue, 2024; UNCTAD, 2024).

Third, modern asymmetric security threats have exposed the limitations of traditional security frameworks. Non-state actors using unmanned aerial vehicles (UAVs), explosive unmanned surface vessels (USVs), and anti-ship ballistic missiles can easily bypass standard onboard security measures prescribed under the International Ship and Port Facility Security



(ISPS) Code, leaving commercial fleets vulnerable to physical destruction and labour shortages (International Chamber of Shipping, 2024).

DISCUSSION

West Asia's strategic geography makes it a vital node for global trade, where disruptions at any single chokepoint trigger systemic consequences throughout the international supply chain.

Table 2
Geostrategic Roles, Trade Volumes, and Security Risk of Major West Asian Maritime Chokepoints

Critical Chokepoint	Primary Geostrategic Role	Estimated Daily Volume	Key Strategic & Security Risks
Strait of Hormuz	Primary Crude Oil & LNG Export Corridor	21 million barrels of oil (21% of global consumption) (EIA, 2023)	Naval blockades, state-level military conflict, vessel seizures, mine laying (Al-Hajri, 2024)
Suez Canal	Premier Asia-Europe Container Trade Arterial	12% of total global trade volume (UNCTAD, 2024)	Traffic jams, accidental grounding, asymmetric drone/missile threats (Rodrigue, 2024)
Bab al-Mandab Strait	Gateway Connecting the Indian Ocean to the Red Sea	6.2 million barrels of petroleum and refined products (EIA, 2023)	Anti-ship ballistic missile strikes, UAV attacks, explosive USV deployment (International Chamber of Shipping, 2024)

The ongoing security crisis in West Asia directly conflicts with the principles of the Blue Economy, which advocates the sustainable use of ocean resources while preserving marine ecosystems. The economic and environmental consequences fall into three primary categories. First, surging operational costs strain commercial feasibility. Bypassing the Red Sea in favour of the Cape of Good Hope increases fuel consumption by 30 percent to 40 percent per voyage, driving spot container freight rates up by 150 percent to 200 percent above baseline levels (UNCTAD, 2024; World Bank, 2024). Second, environmental degradation undermines international sustainability mandates. The substantial increase in bunker fuel burn generates higher emissions of carbon dioxide, sulphur oxides, and nitrogen oxides across pristine oceanic corridors. This spike in operational carbon intensity directly undermines the decarbonisation targets set under the IMO 2030 strategy (IMO, 2024). Third, marine ecosystem disruption poses long-term ecological risks. Increased vessel traffic, higher sailing speeds around the African continent, and heightened military operations introduce elevated underwater noise pollution and increase the risk of accidental fuel spills, threatening delicate coastal marine environments (IMO, 2024).

The empirical analysis yields three primary findings on the impact of the West Asian conflict on global shipping. First, the combination of spatial diversions and elevated war-risk insurance premiums causes severe freight rate inflation and reduces effective global vessel capacity (LMA/IUA, 2024; UNCTAD, 2024). Second, longer voyage distances significantly increase carbon emissions, delaying the maritime industry's transition towards green energy goals (IMO, 2024; Rodrigue, 2024). Third, the crisis has accelerated technological adaptation, with commercial fleet operators increasingly utilising artificial intelligence algorithms and high-resolution satellite surveillance for real-time threat monitoring and dynamic route optimisation (International Chamber of Shipping, 2024).



Table 3
Key Pillars, Focus Areas, and Operational Execution of the Proposed Integrated Maritime Resilience Framework

Resilience Model Pillar	Strategic Focus Area	Practical Operational Execution
Pillar 1: Multilateral Naval Protection	Security & Defence Coordination	Expansion of international naval task forces to provide real-time intelligence sharing, convoy escorts, and active air defence coverage in high-risk zones.
Pillar 2: Digital Threat Intelligence	Technological Risk Mitigation	Deployment of AI-driven route optimization, high-resolution satellite monitoring, and cyber-defence systems to predict threat patterns and protect ship navigation systems.
Pillar 3: Multimodal Infrastructure	Logistics Network Redundancy	Strategic investment in land bridges, cross-border rail corridors, and alternative overland routes to reduce total reliance on single maritime chokepoints.
Pillar 4: Sustainable Fleet Transition	Blue Economy Alignment	Accelerated deployment of green-fuelled vessels equipped with alternative propulsion systems to maintain operational efficiency during rerouting without exceeding emissions targets.

CONCLUSION AND RECOMMENDATIONS

This study demonstrates that geopolitical conflict in West Asia poses a systemic threat to the stability of international trade and the sustainable governance of the Blue Economy. The combination of asymmetric security threats, soaring insurance costs, and long-distance voyage diversions highlights the structural vulnerability of relying on single maritime chokepoints. Addressing these challenges requires coordinated action across several strategic priorities. International policymakers and naval coalitions should strengthen multilateral security frameworks to ensure freedom of navigation through joint intelligence sharing and active commercial escorts in high-risk corridors. Concurrently, logistics planners must invest in multimodal land-bridge infrastructure to build alternative supply-chain capacity. Furthermore, commercial fleet operators should integrate advanced predictive digital technologies, including artificial intelligence and satellite tracking, to enhance threat mitigation. Finally, the global shipping sector must align its risk-management protocols with Blue Economy principles by investing in green vessel technologies that minimise environmental impacts during emergency route diversions.

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BIOGRAPHY

Ismail Ali is an academician as holds Degree of Bachelor of Arts from Universiti Malaya. His interest is on Maritime Civilization in Southeast Asia. Beside teaching and supervision of both under grade and post grade students, he is active in conducting research related to his field, publish book, chapter in book, articles in journal; monograph; attend conference, social work and so forth.

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