

Maritime Security and Energy Vulnerability: Strategic Implications of the Strait of Hormuz

Fawaz Bil'as Khamees*¹, Abd Alhade Mossa Hasan Rshdan²

¹Faculty of Law, Amman Arab University, Amman, Jordan

²Faculty of Law, Amman Arab University, Amman, Jordan

Received: 30 August 2026; Accepted: 04 September 2026; Published: 08 September 2026

DOI: <https://doi.org/10.47772/IJRISS.2026.100800470>

Received: 30 August 2026; Accepted: 04 September 2026; Published: 08 September 2026

Abstract

Nearly one-fifth of the world's oil traffic and a sizable portion of LNG exports pass through the Strait of Hormuz, which continues to be the most strategically important maritime chokepoint in the global energy system. However, the 2026 crisis exposed new aspects of vulnerability, such as the escalation of multipolar rivalry, environmental hazards, and cyber dangers.

This research is significant as it amalgamates maritime security, energy governance, and international law into a unified analytical framework, addressing deficiencies in current literature. Methodologically, it employs a qualitative framework that integrates historical examination, strategic evaluation, and comparative analyses of chokepoint interruptions. The research is informed by Complex Interdependence Theory, which elucidates the convergence of economic, legal, and security factors in influencing systemic vulnerability in international energy transactions.

The vulnerability of the Strait of Hormuz stems from the interplay of military conflicts, legal ambiguities under the United Nations Convention on the Law of the Sea (UNCLOS), and regional geopolitical rivalries. The 2026 crisis demonstrated that disruptions in this strategic passage could trigger immediate fluctuations in oil prices, elevate insurance premiums, and unsettle global markets. Addressing these systemic risks requires the establishment of a comprehensive governance framework that integrates cooperative security arrangements, legal clarity, technological innovation, and ecological safeguards, thereby ensuring resilience in international energy management. Ultimately, the Strait will continue to function as both a vital artery and a potential source of instability, underscoring the necessity of sustained global collaboration to preserve its strategic role in the energy landscape of the twenty-first century.

Keywords: Hormuz, Maritime Security, Global Supply Chains, Geostrategic Chokepoints, and energy governance.

INTRODUCTION

The Strait of Hormuz has historically been acknowledged as a crucial maritime chokepoint, functioning as the main route for approximately one-fifth of the world's oil traffic and a considerable portion of liquefied natural gas (LNG) exports. Its limited geographical expanse, coupled with its critical role in global energy distribution, makes it a central element in regional conflicts and worldwide security issues. The occurrences of 2026, marked by the breakdown of tanker traffic due to intensifying tensions among Iran, Israel, and the United States, underscored the Strait's susceptibility and its potential to disrupt global markets.

Scholars have persistently highlighted the geostrategic significance of the Strait. Butt and Khan (2026) emphasize its function as a "strategic pressure point" in the rivalry among great powers, observing that disturbances in the Strait influence global energy markets. Zouza (2026) highlights the intricate legal and geopolitical challenges, especially Iran's narrow interpretation of transit rights as per UNCLOS, resulting in ongoing uncertainty regarding freedom of navigation. Lassoued (2026) offers a comprehensive evaluation of chokepoint insecurity, illustrating the manner in which maritime vulnerabilities lead to fragility in global supply chains. These investigations combined lay the groundwork for comprehending the Strait as both a vital conduit and a potential risk in global security.

Notwithstanding considerable academic research, deficiencies persist in the amalgamation of maritime security and energy governance. A significant portion of the research regards the Strait primarily as a military flashpoint or an economic chokepoint, although there are fewer analyses that integrate these aspects to explore how legal ambiguity, regional power dynamics, and technical vulnerabilities intersect to influence systemic fragility. The 2026 crisis demonstrated that maritime chokepoints are not standalone occurrences but are linked to global financial stability, cyber resilience, and climatic threats.

This research holds considerable importance for various reasons. Initially, it contextualizes the Strait of Hormuz within the expansive realm of maritime security and energy susceptibility, providing a comprehensive examination that integrates legal, strategic, and economic perspectives. Secondly, it offers revised perspectives considering the 2026 crisis, including current information on oil price fluctuations, insurance costs, and worldwide inflationary trends. Third, it aids policy discussions by pinpointing collaborative security frameworks and governance structures that can alleviate systemic threats. Ultimately, the research highlights the persistent significance of the Strait in a multipolar context, where increasing Asian demand, climate change, and technological advancements will amplify its strategic value.

This study seeks to rigorously analyze the strategic ramifications of the Strait of Hormuz on worldwide energy security, focusing on maritime security issues, regional geopolitical dynamics, legal uncertainties, and collaborative governance frameworks. Through the amalgamation of prior research and the incorporation of modern advancements, the study aims to establish an all-encompassing framework for comprehending and tackling the weaknesses of this essential chokepoint.

METHODOLOGY

This study adopts a qualitative, multi-method research design that integrates historical analysis, strategic assessment, and structured comparative case analysis, informed throughout by Complex Interdependence Theory. This design was chosen because the vulnerability of the Strait of Hormuz results from the interaction of legal, military, economic, and environmental factors that cannot be adequately captured through a single disciplinary lens or a purely quantitative approach. The subsections below detail the criteria used to select sources, the cases and periods examined, the procedure followed in the comparative analysis, and the approach taken to interpreting the evidence, so that the research design can be replicated or extended by other scholars.

Source selection and data collection.

Sources were selected according to three criteria: relevance to the Strait of Hormuz as a maritime security and energy chokepoint, credibility of the issuing body, and temporal proximity to the events under review. Three categories of sources were used. First, peer-reviewed academic literature on maritime chokepoints, energy security, and international law (e.g., Butt & Khan, 2026; Zouza, 2026; Lassoued, 2026) was identified through targeted searches of academic databases using terms such as "Strait of Hormuz," "maritime chokepoint," "UNCLOS transit passage," and "energy security."

Second, primary legal and institutional material consulted, including the text of UNCLOS and public statements issued by the International Maritime Security Construct (IMSC) and the International Energy Agency (IEA), to ground the legal and policy discussion in authoritative material rather than secondary interpretation alone.

Third, contemporaneous reporting on the 2026 crisis from established financial and news outlets was used to reconstruct the sequence of events, price movements, and insurance-market reactions, since this information had not yet been synthesized in peer-reviewed form at the time of writing. Sources in this third category were cross-checked against at least one other independent outlet before being incorporated, in order to reduce the risk of relying on a single, possibly inaccurate, account.

Case and Temporal Scope.

The analysis centers on the 2026 crisis in the Strait of Hormuz as the primary case, since it is the most recent and most severe disruption to transit through the Strait and therefore offers the clearest test of how the vulnerabilities identified in the literature manifest in practice. To situate this case historically and to assess whether the patterns observed in 2026 are recurrent or novel, the primary case is examined alongside earlier episodes of heightened tension in the Strait drawn from the existing literature, including the Tanker War of the 1980s and the tanker seizures and near-confrontations of 2019–2021. These comparison periods were selected because each represents a discrete, dateable episode in which naval or paramilitary action directly disrupted or threatened to disrupt transit, allowing for like-for-like comparison of triggers, duration, and consequences across time. Episodes that involved only diplomatic rhetoric without an operational disruption to shipping were excluded from the comparative set, since they do not provide comparable data on market and security outcomes.

Comparative Analytical Procedure.

For each case, information was systematically extracted across four dimensions:

- (1) The immediate trigger of the disruption (military, legal, or accidental).
- (2) Its duration and the volume of shipping affected.
- (3) Its economic consequences, measured through reported oil-price movements and war-risk insurance premiums.
- (4) The security and legal responses it provoked, including naval deployments, multinational patrols, and invocations of UNCLOS. These dimensions were chosen because they correspond to the four analytical strands developed in the literature review “maritime security, energy vulnerability, regional power politics, and international law” and because comparable data on them could be identified across all cases in the set. The cases were then compared side by side on each dimension to identify recurring patterns, such as the repeated use of asymmetric naval tactics as a deterrent, as well as points of divergence, such as the unprecedented scale of the 2026 price and insurance shock relative to earlier episodes. Complex Interdependence Theory applied as the interpretive framework guiding this comparison, directing attention to how economic, legal, and security channels of interdependence transmit the effects of a disruption in one domain into the others.

Interpretation of Evidence and Limitations.

Evidence interpreted through triangulation: a claim about the causes or consequences of a given episode was treated as reasonably established only where it was corroborated by at least two independent sources, or by an academic source together with a primary document. Where sources disagreed “for instance, on the exact percentage decline in shipping traffic during the 2026 crisis” the study reports the range found across sources rather than adopting a single, unverified figure. The analysis is qualitative and interpretive rather than statistical, and it does not draw on original interviews or classified material; it therefore reflects the limits of what is observable in open-source

academic legal, and media reporting at the time of writing. This is a deliberate trade-off: the approach sacrifices the precision of quantitative modeling in exchange for the ability to trace how legal, security, and economic factors interact across cases, which is the central question this research addresses.

Theoretical Framework: Complex Interdependence Theory

This study is guided throughout by Complex Interdependence Theory, developed by Keohane and Nye (1977) as a corrective to realist accounts that treat states as unitary actors for whom military security is the dominant, and largely separate, concern. Keohane and Nye developed the theory to explain relationships, such as those among advanced industrial economies, in which societies dense economic, institutional, and social ties that make purely military connect or purely realist explanations incomplete. The Strait of Hormuz case shares this defining feature: it is a setting in which energy dependence, legal obligation, and security competition are so tightly interwoven that isolating any single dimension would misrepresent how vulnerability actually arises and propagates. Complex Interdependence Theory was therefore selected not as a general label for “interconnectedness” but because it is specific analytical apparatus, “three structural conditions and two concepts of dependence” offers testable expectations about where instability in the Strait should be expected to concentrate and how it should be expected to spread.

Keohane and Nye specify three structural conditions that distinguish complex interdependence from a purely realist world. First, multiple channels connect societies, including interstate, trans governmental, and transnational relations, so that outcomes are not determined solely through formal diplomacy between heads of state. Second, there is an absence of hierarchy among issues, meaning that military security does not automatically take precedence over economic, legal, or environmental concerns; different issues can be more or less salient depending on context. Third, military force plays a minor role among interdependent actors, since the costs of using force against a partner on whom one depends economically tend to be prohibitively high. Applied to the Strait of Hormuz these three conditions direct attention to respectively the range of actors involved beyond Iran and the United States alone. The competition between legal and security logics documented in the "International Law and Freedom of Navigation" section below, and the empirical question, examined in the "Maritime Security Challenges" section, of whether force genuinely plays a "minor" role in a chokepoint that a single state can physically threaten to close.

The theory's second analytical contribution is the distinction between sensitivity and vulnerability interdependence. Sensitivity refers to the speed and magnitude with which change in one part of an interdependent system produces costly effects elsewhere before any policy response is possible; vulnerability refers to the cost an actor incurs in adjusting to that change once alternative options “substitute suppliers, alternative routes, or strategic reserves” taken into account. A country can be highly sensitive to a disruption in the Strait, in that prices and shipping costs move against it immediately, while remaining relatively invulnerable if it can draw down reserves or reroute supply at acceptable cost; conversely, an actor with limited substitutes is vulnerable regardless of how quickly it registers the shock. This distinction applied directly in the "Energy Vulnerability and Global Supply Chains" section, where it differentiates energy importers by their capacity to absorb, rather than merely register, a disruption of transit through the Strait.

Taken together, these concepts structure the analysis that follows. The discussion of energy dependence draws on sensitivity and vulnerability interdependence to explain why the costs of the 2026 crisis fell unevenly across importing states. The discussion of maritime security relations tests the theory's expectation that force plays a minor role against the Strait's evident militarization. The discussion of legal ambiguity under UNCLOS is read through the absence of a clear hierarchy between legal and security imperatives; and the discussion of regional power politics draws on the theory's emphasis on multiple channels of contact to explain why the Strait's security dilemma cannot be reduced to bilateral state-to-state bargaining. Each of the four thematic sections below therefore closes with a short passage that makes this theoretical application explicit.

It should be noted that the Strait of Hormuz is, in some respects, a hard case for Complex Interdependence Theory, since Keohane and Nye developed the framework primarily with reference to relations among economically advanced, broadly like-minded states, whereas the Strait involves an actor, Iran, that has actively used the threat of military closure as a bargaining tool. Rather than treating this as a reason to discard the theory. The analysis below treats the persistence of military salience as a finding in its own right: it indicates that the “minor role of force” condition is more accurately understood as a variable outcome, dependent on the presence of alternative channels and substitutes, than as a fixed property of interdependent relationships in general.

The Geostrategic Significance of the Strait of Hormuz

The Strait of Hormuz is a crucial maritime bottleneck within the international energy framework. Geographically, it is a slender corridor roughly 55 kilometers in width, connecting the Persian Gulf to the Gulf of Oman and the Arabian Sea. This distinctive location serves as the only maritime access point for multiple Gulf nations, such as Saudi Arabia, Kuwait, Qatar, and the United Arab Emirates, thereby establishing it as a vital conduit for global commerce and energy distribution (Zouza, 2026).

From an energy standpoint, the significance of the Strait is unmatched. Approximately 20 percent of worldwide oil usage and a significant portion of liquefied natural gas (LNG) exports pass through this route, highlighting its critical importance to the global economy. The dependence of significant importers like China, Japan, India, and European nations on Gulf energy resources underscores the susceptibility of global energy security to interruptions in this confined maritime route (Butt & Khan, 2026).

The Strait has become a central arena for competition among major powers. The United States sustains a naval presence to protect navigational liberties, but Iran often indicates its ability to obstruct maritime traffic as a kind of geopolitical influence. This situation engenders a continual security quandary, wherein the militarization of the Strait heightens the potential for escalation and instability (Lassoued, 2026). Additionally, China's increasing reliance on Gulf oil imports and Russia's burgeoning alliances in the Middle East exacerbate the geopolitical rivalry concerning the Strait.

This pattern of chokepoint-centered great-power competition is not unique to Hormuz. Rodrigue (2004) situates the Strait within a broader global geography of maritime chokepoints “alongside Bab-el-Mandeb, the Strait of Malacca, and the Suez Canal”, through which control over, or the mere capacity to disrupt, access to petroleum-exporting regions has repeatedly become a strategic asset in its own right, independent of formal territorial control.

The legal aspects further enhance its geostrategic importance. The United Nations Convention on the Law of the Sea (UNCLOS) ensures navigational freedom, although Iran's narrow interpretation of transit rights creates uncertainty and conflict. This legal ambiguity exacerbates the strategic susceptibility of the Strait, rendering it a matter of military and economic significance as well as a disputed legal territory (Zouza, 2026).

Consequently, the Strait of Hormuz is a nexus of geography, oil reliance, and geopolitical competition. Its function as a crucial source of global energy and a possible catalyst for conflict makes it pivotal in current discussions over maritime security and energy susceptibility.

Maritime Security Challenges in a Critical Energy Chokepoint

The Strait of Hormuz is both a geostrategic energy corridor and a maritime environment prone to security crises. Its limited geography and the concentration of oil tankers and naval vessels create conditions in which minor incidents can escalate into major crises. Maritime security is therefore a major concern for regional and international stakeholders, given both traditional and nontraditional military threats (Tariq, 2025).

Iran's naval strategy illustrates the asymmetric dimension of maritime vulnerability. Iran has consistently demonstrated its capacity to obstruct navigation in the Strait using fast-attack vessels, mines, and anti-ship

missiles, employing maritime advantage as a means of deterring external influence. Such tactics heighten the vulnerability of energy distribution, since even brief interruptions can trigger worldwide price fluctuations (Awan & Shahab, 2025). In addition to state actors, the threat of maritime terrorism and sabotage targeting oil tankers or offshore facilities introduces an additional dimension of vulnerability.

Talmadge's (2008) influential assessment of these capabilities concludes that, mines, fast-attack craft, and anti-ship missiles could allow Iran to impede. Though probably not fully close traffic through the Strait for a limited period, at substantial cost to Iran itself; a rejoinder by O'Neil (2009) further cautions that such assessments can understate the economic and military costs Iran would incur, underscoring that the credibility of Iran's deterrent rests as much on ambiguity as on demonstrated capability. This strategy fits a broader pattern of hybrid and asymmetric defense adopted by state and non-state actors, seeking to offset conventional military inferiority (Ashour, 2015). Moreover, it produces the kind of deterrence dynamic in which displays of capability, rather than sustained combat, used to signal resolve, a pattern Harel and Inbar (2015) describe as generating "symbolic victories" that nonetheless leave the underlying strategic relationship unstable.

The militarization of the Strait, marked by U.S. and allied naval forces intended to safeguard navigation rights, fosters a precarious equilibrium (Reisman, 1980). Although these influences serve as a deterrent, they simultaneously increase the likelihood of misjudgment. Frequent interactions between Iranian patrols and Western naval vessels have consistently heightened apprehensions over unintended escalation, highlighting the fragility of maritime security in this densely trafficked chokepoint.

Maritime insecurity extends beyond mere military conflict. Cyber vulnerabilities affecting shipping logistics, piracy in nearby waters and natural hazards like oil spills exacerbate the security environment. These unconventional threats underscore the multidimensional character of maritime security, in which energy vulnerability is shaped not solely by geopolitical competition but also by inherent weaknesses in global supply systems (Zaman & Khan, 2026).

The combination of conventional, asymmetric, and unconventional threats renders the Strait of Hormuz a distinctive maritime bottleneck where energy vulnerability is closely intertwined with security dynamics. Any interruption "be it by military conflict, sabotage, or ecological catastrophe" produces prompt effects on international energy markets, underscoring the strategic necessity of safeguarding this passage.

Viewed through Complex Interdependence Theory, this security landscape illustrates a tension the theory itself flags rather than resolves. Keohane and Nye (1977) argue that among genuinely interdependent actors, military force plays a diminished role relative to economic and institutional channels. Yet in the Strait, force and the threat of force remain the primary instruments of Iranian deterrence and of the naval presence maintained by the United States and its allies. This persistence of military salience does not refute complex interdependence so much as mark the limits of the "minor role of force" condition in a setting where a single actor controls a geographically fixed chokepoint. It is precisely this deviation from the theory's expectations that helps explain why the security channel remains so tightly coupled to the economic one, transmitting the effects of naval incidents directly into global energy markets.

Energy Vulnerability and Global Supply Chains

The Strait of Hormuz serves as a vital conduit in the global energy system, and its vulnerability directly affects the resilience of global supply lines. Approximately 20 percent of worldwide oil usage and a significant portion of liquefied natural gas (LNG) exports traverse this confined maritime passage, rendering it essential for the operation of global markets (Butt & Khan, 2026). The aggregation of energy resources at a singular chokepoint engenders systemic vulnerability: any disturbance "be it military, political, or environmental" can instigate rapid price fluctuations and erode trust in supply reliability.

Asian economies such as Japan, China, and India are especially vulnerable because of their dependence on petroleum resources from the Gulf. Europe likewise continues to rely on the uninterrupted passage of oil and gas through the Strait. This reliance heightens the vulnerability of global supply chains, as disturbances in the Strait resonate across continents, affecting industrial production, logistics, and economic development (Gupta, 2008).

In response to this vulnerability, Gulf nations have invested in alternative pathways, such as Saudi Arabia's East–West pipeline and the UAE's Fujairah pipeline. Although these initiatives offer some relief, they remain insufficient to rival the volume of maritime traffic traversing the Strait. The sheer volume of energy conveyed underscores the ongoing strategic reliance on this critical juncture, despite these diversification efforts (Iqbal & Ikram, 2026).

This limited diversification reflects a structural feature of Gulf political economies more broadly: Krane (2019) argues that the region's oil-exporting states have historically under-invested in redundant export infrastructure in part because maximizing revenue through the lowest-cost route “the Strait itself” has taken priority over costly insurance against its closure. Yergin (2020) situates this dependence within a wider reordering of global energy geopolitics, in which even a partial, temporary disruption of Gulf supply can have outsized price effects precisely because spare capacity and diversified export routes have not kept pace with demand growth in Asia.

In addition to physical transportation, the vulnerability of energy supply chains is compounded by logistical and financial interconnections. Shipping insurance costs rise during periods of turmoil, while interruptions in tanker movement affect global refinery operations. The interdependence of worldwide energy markets indicates that localized events in the Strait can trigger widespread disruptions, underscoring the vulnerability of supply lines under intensified geopolitical rivalry (Schortgen, 2025).

The vulnerability of Hormuz illustrates the interconnection between maritime security and energy management. Maintaining peace in this corridor is both a regional obligation and a global requirement. In the absence of reliable systems to safeguard transit, energy supply chains would continue to be vulnerable to fluctuations, jeopardizing strategic stability and economic resilience.

This pattern corresponds closely to the sensitivity and vulnerability dimensions of interdependence identified by Keohane and Nye (1977). Sensitivity captures how quickly and severely a disturbance in the Strait registers in importing economies before any policy adjustment is possible, while vulnerability captures the cost of adjusting once alternative supplies or routes must actually be found. Asian economies display high sensitivity, since price and availability effects reach them almost immediately, but their vulnerability varies with the depth of their strategic reserves and the diversity of their supplier base; Gulf exporters, by contrast, exhibit lower short-term sensitivity but rising vulnerability as the limited capacity of bypass pipelines is exposed. Complex interdependence therefore predicts, and the 2026 crisis confirmed, that the actors least able to substitute away from the Strait bear the largest adjustment costs, regardless of their formal political or military power.

Regional Power Politics and Security Dilemmas

The Strait of Hormuz is not just a sea route; it is a disputed geopolitical area, where regional power dynamics influence security challenges. Iran's territorial dominance along the northern coastline of the Strait affords it tactical advantage, allowing threats to impede or obstruct passage during times of increased strain. This capability has been consistently utilized as a negotiating leverage in reaction to sanctions or foreign military coercion, bolstering the view of the Strait as a geopolitical asset rather than an impartial transit route (Ghobadi, 2026).

Iran's maritime strategy prioritizes asymmetric assets, including swift assault vessels, mines, and missile systems, enabling it to confront more powerful conventional militaries. By indicating its capacity to obstruct or shut down the Strait, Iran establishes a deterrent influence against foreign interference. This approach, meanwhile, instills

apprehension among Gulf Cooperation Council (GCC) nations reliant on the Strait for their oil exports (Zouza, 2026).

The Gulf Cooperation Council nations, especially Saudi Arabia and the United Arab Emirates, depend on external security assurances, notably from the United States, to protect navigational liberties. U.S. naval deployments in the area function as both a deterrent and a source of confidence, yet they also facilitate militarization. This interaction creates a security dilemma: Iran regards foreign involvement as a menace to its sovereignty, but GCC nations consider it vital for their survival (Tariq & Kiran, 2025).

This configuration matches what Buzan and Wæver (2003) describe as a regional security complex in which the security of neighboring states is so interlinked that their security problems cannot be analyzed, or resolved apart from one another. Gause (2010) similarly argues that the international relations of the Persian Gulf have long been structured around exactly this kind of interdependent security dilemma between Iran and the smaller Gulf states mediated by the presence of an external power.

The interaction between Iranian deterrence and GCC dependence on external security fosters a cycle of escalation. Maritime mishaps, near confrontations, and verbal threats heighten the likelihood of misjudgment. The Strait exemplifies wider conflicts in the Middle East, where local independence clashes with foreign involvement, resulting in a precarious balance that is perpetually vulnerable to disruption (Ahmad & Aziz, 2026).

These dynamics also extend beyond the Gulf itself. Valbjørn, Bank, and Darwich (2024) trace how Iran's regional alliance network, often described as an "axis of resistance," links the Strait's security dynamics to conflicts elsewhere in the Middle East. While Krieg (2025) situates this pattern within a broader decline of unipolar U.S. leadership and the emergence of more autonomous regional security orders. Springer (2019) documents a parallel cycle of destruction and reconstruction in Gaza, illustrating a feature common to the region's recurring conflicts and relevant to the Strait: cycles of escalation and de-escalation tend to reset rather than resolve the underlying strategic competition, leaving structural vulnerabilities in place for the next crisis.

This security predicament highlights the interconnection between regional politics and marine safety. The Strait of Hormuz serves as both a channel for energy and a platform for power demonstration, deterrent, and competition. Its susceptibility is rooted not merely in its geographical location but also in the political disputes that characterize its security landscape.

This dynamic also reflects the first structural condition of complex interdependence: the existence of multiple channels connecting societies, encompassing interstate diplomacy as well as transgovernmental military-to-military contacts and transnational commercial relationships (Keohane & Nye, 1977). Interaction in the Strait plays out simultaneously between Iran and the United States, between Iran and the GCC states, within multilateral bodies such as the IMSC, and among energy companies, insurers, and shipping lines operating largely outside formal state channels. No single channel can therefore be relied upon to manage escalation, since a rupture in one "a naval incident, for instance" can be only partially contained through diplomatic or commercial channels operating in parallel.

International Law and Freedom of Navigation

The legal architecture governing passage through the Strait of Hormuz is set out in Part III of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), Articles 37 to 44, negotiated as part of a broader package deal at the Third UN Conference on the Law of the Sea. In exchange for accepting an extension of the coastal state's territorial sea from three to twelve nautical miles; "an extension that would otherwise have converted many international straits, including Hormuz, entirely into territorial waters navigable only under the more restrictive regime of innocent passage". The major maritime powers secured a new, non-suspendable right of transit passage for straits used for international navigation (Article 37) (United Nations, 1982). Article 38 establishes that all

ships and aircraft, including warships, enjoy the right of transit passage, defined, as the exercise of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit, and Article 44 obliges states bordering such straits not to hamper or suspend this passage. Article 39 imposes reciprocal duties on transiting vessels: they must proceed without delay, refrain from any threat or use of force against the sovereignty, territorial integrity, or political independence of the bordering states, and refrain from activities other than those incidental to normal, continuous, and expeditious transit unless rendered necessary by force majeure or distress. Article 42 permits bordering states to adopt laws on navigational safety, pollution, and fisheries, but explicitly prohibits regulations that have the practical effect of denying, hampering, or impairing the right of transit passage (Naderi, 2026).

This treaty-based regime builds on an older customary foundation. In the *Corfu Channel* case (United Kingdom v. Albania, 1949); the International Court of Justice held that states bordering straits connecting two parts of the high seas may not prohibit the passage of foreign warships in peacetime. Provided the passage is not prejudicial to the coastal state's security, establishing that some right of passage through international straits predates and exists independently of UNCLOS (International Court of Justice, 1949). The transit-passage regime introduced by Article 38 goes further than what the *Corfu Channel* judgment required, however, extending overflight rights and removing the coastal state's power to suspend passage even temporarily "provisions negotiated specifically as treaty innovations rather than codifications of pre-existing custom. Whether this expanded regime has itself since crystallized into a rule of customary international law binding on states that are not parties to UNCLOS. Remains genuinely unsettled in the legal literature (Deligiannis-Virvos, 2026), the standard doctrinal treatment of the straits regime, Churchill and Lowe's *The Law of the Sea*, likewise emphasizes that, transit passage was a negotiated innovation of UNCLOS III rather than a straightforward codification of custom. Which is precisely why its applicability to non-parties remains contested (Churchill & Lowe, 1999)" and it is this unsettled status, rather than a simple disagreement over facts, that lies at the center of the dispute over the Strait of Hormuz.

Iran's position is more specific than a generic "narrow interpretation" of transit rights. Iran signed UNCLOS in 1982; but has never ratified it; its declaration upon signature asserted that only states that are parties to the Convention are entitled to exercise the navigational rights it creates. Including transit passage, and that under customary law coastal states retain the right to require prior authorization for warships exercising innocent passage through their territorial sea (Government of the Islamic Republic of Iran, 1982). Iran codified this position domestically in its 1993 Act on the Marine Areas of the Islamic Republic of Iran in the Persian Gulf and the Oman Sea. Which restricts the right of transit passage through the Strait of Hormuz to states that are parties to UNCLOS and requires prior authorization for the innocent passage of foreign warships more generally (U.S. Department of State, 1994). Since neither the United States nor Israel is a party to UNCLOS, Iran's declared position would, on its own terms, deny both states any treaty-based right of transit passage, leaving them, on Iran's reading, subject to the more restrictive and suspendable regime of innocent passage.

The United States has likewise never ratified UNCLOS; but maintains that the transit-passage regime reflects customary international law binding on all states, regardless of treaty membership. A position it operationalizes through the Department of Defense's Freedom of Navigation Program, which has recorded formal diplomatic and operational challenges to Iran's restrictions since the 1980s, alongside comparable, though generally unenforced, Omani requirements for prior authorization of foreign warships (U.S. Department of Defense, 2015). Oman offers an instructive point of comparison: unlike Iran, Oman ratified UNCLOS, and although its domestic law has historically also required prior permission for foreign warships transiting its territorial sea, Oman applies the transit-passage regime in practice within the Strait, where much of the internationally recognized traffic separation scheme lies within Omani rather than Iranian waters. This asymmetry between the two littoral states means that the legal status of a given transit through the Strait can differ depending on whose territorial sea a vessel is navigating at a given moment.

The practical stakes of this ambiguity are illustrated by episodes such as Iran's 2019 seizure of the British-flagged tanker *Stena Impero*, justified by Iranian authorities on navigational-safety and environmental grounds. Under a

strict reading of Article 39, a coastal state may not impede transit passage on such grounds unless the vessel is actually engaged in a threat or use of force or in activities beyond continuous and expeditious transit, so the legality of such seizures turns on contested factual and legal characterizations rather than on the text of UNCLOS alone. Wartime conditions such as those of 2026 add a further layer of complexity. The San Remo Manual on International Law Applicable to Armed Conflicts at Sea (1994) provides that, the right of transit passage continues to apply to neutral shipping even during armed conflict and may not be suspended by belligerent or neutral states. Which suggests that a wartime restriction of the Strait to third-country shipping raises legal questions distinct from those governing Iran's peacetime declaration.

Read together, these sources show that the dispute over navigation through the Strait of Hormuz cannot be reduced to a simple contest between a settled, rules-based consensus and a single state's obstruction of it. It is more precisely a disagreement over unsettled questions of treaty and customary law. The non-party status of the three principal actors, the customary standing of the transit-passage regime itself, the factual threshold for lawful coastal-state interference under Article 39, and the distinct wartime rules under the law of naval warfare, layered on top of the underlying security competition examined elsewhere in this study.

The legal challenges around freedom of passage are intrinsically linked to energy security. Any limitation or interruption in transit rights immediately influences the movement of oil and gas, thus undermining international markets. Guaranteeing the lucidity and implementation of international law in the Strait is therefore both a legal obligation and a strategic requirement for worldwide energy management.

The persistence of this legal ambiguity is itself consistent with the second structural condition of complex interdependence, the absence of a clear hierarchy among issues (Keohane & Nye, 1977). Rather than legal norms under UNCLOS taking precedence over security considerations, or vice versa, the case of the Strait shows the two operating on the same plane: Iran's security-driven interpretation of transit rights and the United States' legally framed freedom-of-navigation operations each claim priority, and neither international law nor military deterrence alone is able to settle the matter. This absence of hierarchy is what allows legal disputes to be mobilized as strategic instruments rather than resolved as technical questions of treaty interpretation.

Strategic Implications for Global Energy Security

The vulnerability of the Strait of Hormuz carries significant strategic consequences for global energy security. The reliability of this transit route, which accounts for approximately one-fifth of world oil trade and a substantial share of LNG exports, directly affects the stability of international energy markets. Any disturbance “be it military conflict, sanctions, or sabotage” can trigger immediate fluctuations in oil prices and erode confidence in the reliability of supply (Butt & Khan, 2026).

Instances of conflict in the Strait have illustrated the vulnerability of international markets to disturbances. Even minor incidents, such as the brief detention of tankers or threats of closure, have led to significant increases in insurance premiums and surges in oil prices. This volatility highlights the strategic dependence of importing nations on continuous transit through the Strait (Trade, U. N. *Development*, 2026).

Major energy importers, such as China, Japan, India, and European nations, continue to depend substantially on Gulf energy resources. This reliance enhances the strategic significance of the Strait, requiring policies aimed at safeguarding maritime passage. It also shapes foreign policy, as nations frequently enter regional security alliances to protect their oil supply routes (Lassoued, 2026).

Initiatives to diversify energy pathways, including pipelines circumventing the Strait, offer limited relief but cannot match its scale. The Fujairah pipeline in the UAE and Saudi Arabia's East–West pipeline mitigate risk but remain constrained relative to seaborne transport. Thus, the Strait persists as both a crucial asset and a potential risk, underscoring its significance in energy geopolitics (Ulrichsen & Krane, 2026).

The vulnerability of the Strait requires major powers to sustain a naval presence and invest in collaborative security frameworks. For the United States, efforts to ensure freedom of navigation serve as both a legal declaration and a strategic imperative. China's reliance on energy supplies from the Gulf drives its interest in safeguarding maritime pathways. The Strait thus becomes a significant element in global strategic assessments, where energy security converges with military power and international law (Kaya, 2026).

Ultimately, the strategic ramifications of the Strait underscore the need for cohesive governance systems that integrate legal precision, military deterrence, and collaborative structures. In the absence of reliable assurances of stability, global energy security will continue to be vulnerable to fluctuations, jeopardizing economic resilience and international stability.

Policy Options and Cooperative Security Mechanisms

Ensuring the security of the Strait of Hormuz necessitates more than singular military actions; it requires collaborative structures that reconcile issues of sovereignty with the needs of common security. Due to its significance as a worldwide energy bottleneck, the Strait cannot be protected by a solitary entity. Policy alternatives should incorporate regional strategies, global collaboration, and technical advancements to reduce susceptibility (Wang & Guo, 2026).

A significant governmental reaction has been the formation of multinational patrols. The International Maritime Security Construct (IMSC), spearheaded by the U.S., embodies this strategy, seeking to dissuade attacks and provide assurance to commercial shipping. Although successful in delivering prompt security, these programs encounter legitimacy issues, as local governments frequently view them as foreign impositions rather than collaborative resolutions (Rathnayake, 2025).

Fostering confidence among Iran and the Gulf Cooperation Council (GCC) nations constitutes an alternative policy direction. Strategies like collaborative naval drills, established communication channels, and accords on accident prevention may mitigate the chances of misjudgment. Nonetheless, profound political skepticism and conflicting security narratives obstruct the execution of these policies (AlGhaniem, 2026).

Such confidence-building measures are consistent with what Deutsch (1957) termed a pluralistic security community. "A group of states that develop reliable expectations of peaceful change without necessarily merging politically", though Deutsch's own research suggested that, such communities typically emerge only after sustained transactions and a degree of mutual identification that, so far, has been largely absent between Iran and its Gulf neighbors.

Improving marine domain awareness via satellite monitoring, cyber resilient supply chains, and automated ship tracking provides non-military remedies to insecurity. These advancements enhance clarity and diminish ambiguity, therefore augmenting conventional naval deterrence. However, technological solutions necessitate considerable investment and collaboration across various jurisdictions (Perković & Feuerstack, 2024).

The primary challenge involves harmonizing Iran's assertions of sovereignty with the international necessity for navigational freedom. Cooperative frameworks must consequently be established to honor national priorities while guaranteeing continuous energy supply. In the absence of an equilibrium, policy alternatives may intensify conflicts instead of mitigating them.

In the end, collaborative security strategies in the Strait are essential not just for the region but also for the world. Through the amalgamation of military deterrence, legal precision, and technical advancement, policy structures can mitigate susceptibility and bolster resilience in international energy governance.

Future Outlook: Maritime Security and Energy Governance in the 21st Century

The trajectory of the Strait of Hormuz will be influenced by increasing energy requirements, advancements in technology, and geopolitical rivalry. Notwithstanding diversification initiatives, including pipelines circumventing the Strait, its significance as a global bottleneck is improbable to lessen. The substantial quantity of oil and LNG sent along this corridor guarantees its status as a vital element of maritime security and energy management throughout the 21st century. Asian economies “particularly China and India” are projected to increase their reliance on Gulf energy supplies. This dependence will intensify the strategic importance of the Strait, compelling these states to engage more actively in regional security arrangements. As a result, the Strait may evolve into a contested space not only between regional actors but also among global powers seeking to secure their energy lifelines (Shuja, 2025).

Climate-induced disturbances, including severe weather phenomena and increasing sea levels, present further threats to maritime safety. Incidents involving oil leaks in the Strait may result in devastating ecological and financial repercussions. These dangers underscore the necessity for cohesive governance frameworks that tackle both conventional security issues and new environmental obstacles (Sasikala & Hanne, 2026).

Progress in monitoring, cyber fortitude, and automated logistics will transform the security environment. Augmented maritime domain awareness can diminish ambiguity and enhance crisis management. Nonetheless, reliance on technology also brings up novel vulnerabilities, especially in cyberspace, where assaults on logistical frameworks could interrupt energy distribution without direct conflict.

The future administration of the Strait will depend on the capacity of local and international stakeholders to harmonize territorial assertions with the need of collective security. In a multipolar environment, collaborative strategies “whether through international patrols, legislative structures, or technology advancements” will be crucial to reduce susceptibility. In the absence of these measures, the Strait will continue to be a focal point where energy security and geopolitical competition intersect (Egwuatu, 2026).

DISCUSSION

The Strait of Hormuz continues to be the globe’s most vital maritime bottleneck, enabling the passage of over 20 million barrels of oil per day, which constitutes around 20–30 percent of maritime oil commerce, as well as 20 percent of worldwide LNG deliveries. Its limited geography and essential nature render it a central element in international energy diplomacy. Read against the four analytical dimensions set out in the Methodology, and traced separately through the sections above “maritime security, energy vulnerability, regional power politics, and international law”. The 2026 crisis offers the clearest empirical test yet of how these dimensions interact in practice: it demonstrated that disturbances in this corridor extend well beyond oil prices, influencing transportation costs, insurance rates, and international financial markets simultaneously.

Iran's unconventional naval strategy “mining shipping routes, deploying fast-attack vessels, and employing missile systems” resulted in a drastic reduction of maritime traffic. From approximately 130 daily passages before the conflict; to as few as five or six vessels a day at the height of the crisis; a decline of roughly 95–97 percent, according to satellite radar and AIS-based tracking and UNCTAD trade data (Cao et al., 2026; UNCTAD, 2026; Al Jazeera, 2026a). This militarization, together with U.S. and European naval operations, fostered a precarious situation in which errors of judgment could lead to a wider confrontation. The scale of this disruption empirically substantiates the assessment offered earlier in the Maritime Security Challenges section. Talmadge (2008) anticipated that Iran's asymmetric capabilities could impede, though probably not fully close, traffic through the Strait, and a sustained 95–97 percent decline is consistent with severe impediment rather than absolute closure. While the fact that Iran did not attempt to hold the Strait fully closed corroborates O'Neil's (2009) caution that the costs of doing so would have been prohibitive even for Iran itself.

The crisis exposed inherent vulnerabilities within international supply networks. Brent crude prices escalated to above \$114 per barrel at their March 2026 peak, more than 20 percent above pre-war levels (Gulf News, 2026). While war-risk insurance premiums for tankers transiting the Strait rose from roughly 1–3 percent of hull value to 7.5–10 percent close to a tenfold increase, adding millions of dollars to the cost of a single voyage (S&P Global Commodity Insights, 2026). The International Monetary Fund's adverse scenario projected that global headline inflation could rise to 5.4 percent in 2026, up to 1.6 percent points above its pre-war forecast of 3.8 percent, should the disruption persist (IMF, 2026). Notwithstanding diversification initiatives, the pipelines in Saudi Arabia and the UAE were unable to offset the throughput of the Strait. These figures give empirical content to the sensitivity “vulnerability” distinction developed in the Energy Vulnerability section. The near-instantaneous rise in prices and insurance costs reflects the high sensitivity of import-dependent economies, registering the shock before any policy adjustment was possible, while the pipelines' inability to absorb the shortfall reflects the deeper vulnerability that follows once alternative routes must actually be relied upon.

Iran used its dominance over the Strait as a negotiating instrument; in response to sanctions and foreign military coercion. Whereas GCC nations depended on U.S. and partner naval assurances. This situation created a security dilemma: Iran regards foreign presence as a threat, while Gulf nations consider it vital for their existence. The 2026 conflict underscored the interplay between local rivalry and international geopolitical priorities, confirming empirically the security dilemma identified in the Regional Power Politics section: Iran's use of the Strait as leverage and the GCC's compensating reliance on U.S. guarantees were not merely theoretical possibilities but the concrete mechanism through which the crisis escalated.

Although UNCLOS guarantees transit passage, Iran's stringent interpretation requiring prior consent for warships heightens legal uncertainty. U.S. and allied freedom-of-navigation operations reinforced global standards while simultaneously provoking friction, highlighting the discord between legal doctrine and geopolitical realities. This is precisely the absence of hierarchy between legal and security imperatives discussed in the International Law section: because neither Iran's treaty-based objections nor the United States' freedom-of-navigation doctrine could settle the underlying dispute on its own, legal argument functioned during the crisis as an extension of strategic competition rather than as an independent constraint upon it.

The crisis compelled governments and organizations such as the International Energy Agency (IEA) to reevaluate their resilience measures; in March 2026 the IEA's 32 member countries agreed to release 400 million barrels of oil from emergency reserves, the largest coordinated release in the agency's history (International Energy Agency, 2026). Emergency measures encompassed stockpile distributions and contingency strategies, but the magnitude of interruption, affecting an estimated 15–20 percent of global oil supply — corresponding to the roughly 20 million barrels per day that normally transit the Strait (IMF, 2026; U.S. Energy Information Administration, 2026), was unparalleled in post-war history.

Multinational patrols, such as the IMSC, offered limited deterrence and faced questions of legitimacy. Confidence-building initiatives between Iran and the GCC nations remain constrained by mutual skepticism. Technological advances in monitoring and cyber resilience hold promise but require coordinated funding. These outcomes corroborate the concerns raised in the Policy Options section regarding the legitimacy limits of externally led patrols and the fragility of confidence-building measures in the absence of the sustained mutual identification that Deutsch (1957) held to be a precondition for a genuine security community.

Taken together, the military, economic, political, legal, and institutional evidence reviewed above converges on a single conclusion, developed further below: vulnerability in the Strait of Hormuz cannot be attributed to any one cause, but arises from the tight coupling of the four dimensions examined throughout this study. The 2026 crisis marked a pivotal moment in making this coupling visible: maritime chokepoints are now regarded as strategic leverage points affecting diplomacy, economic stability, and military strategy simultaneously. Rising Asian demand, environmental hazards, and multipolar rivalry will further heighten the significance of the Strait.

Future governance should incorporate legal precision, collaborative security, and technological resilience to mitigate systemic vulnerability.

CONCLUSION AND FINDINGS

This research has shown that the Strait of Hormuz is not just a geographical bottleneck but a complex domain where maritime security, energy management, and international law intersect. Utilizing a qualitative analytical framework that integrates historical analysis, strategic evaluation, and comparative case studies, the study has elucidated how systemic vulnerabilities in the Strait are influenced by both conventional and unconventional threats. The implementation of Complex Interdependence Theory was especially beneficial, as it enabled the research to elucidate the interactions among economic reliance, legal uncertainty, and security challenges, demonstrating that disturbances in one area invariably propagate to others.

These findings, drawn from the comparative case analysis described in the Methodology, converge on four interrelated insights corresponding to the analytical dimensions used throughout this study “maritime security, energy vulnerability, regional power politics, and international law” each grounded in the evidence examined above in the Discussion.

Underlying all four dimensions is the Strait's foundational geostrategic significance: its dual function as a vital conduit for global energy and a geopolitical leverage point. Its limited area and critical role in oil and LNG transportation render it particularly vulnerable to disturbances, with prompt repercussions for international markets, as the 20–30 percent share of global maritime oil trade passing through the Strait illustrates.

First, with respect to maritime security, the crisis confirmed a persistent vulnerability to asymmetric naval tactics. Iran's unconventional tactics “including mining, missile deployment, and the use of fast-attack vessels” converged with U.S. and allied military buildup to reduce shipping traffic by 95–97 percent at the height of the crisis, fostering a precarious situation in which misjudgment could lead to a wider confrontation. This dynamic exemplifies the security dilemma inherent in complex interdependence, wherein measures adopted for deterrence simultaneously induce insecurity in others.

Second, with respect to energy vulnerability, the research underscores systemic exposure. Diversification initiatives, such as pipelines circumventing the Strait, proved inadequate relative to its capacity: the crisis drove Brent crude prices above \$114 per barrel, raised war-risk insurance premiums nearly tenfold, and contributed to an IMF-projected rise in global inflation of up to 1.6 percent points, affirming the interconnectedness of energy supply networks and economic stability.

Third, with respect to regional power politics, the dynamics of the crisis exacerbated existing vulnerabilities. Iran's deterrent strategy conflicts with the GCC's dependence on foreign assurances, exacerbating militarization and suspicion, and confirming the interstate security dilemma examined earlier in this study.

Fourth, with respect to international law, the crisis exposed the practical limits of a legal regime that neither party could invoke to resolve the dispute unilaterally. Iran's non-ratification of UNCLOS and its insistence on prior consent for warships stood alongside the United States' treaty-independent claim that transit passage reflects binding customary law; because neither position held clear priority over the other. Legal argument functioned during the crisis as an extension of the underlying security competition rather than as an independent constraint upon it—precisely what complex interdependence's second structural condition, the absence of hierarchy among issues, would predict.

Ultimately, these four findings “spanning maritime security, energy vulnerability, regional power politics, and international law” underscore that future governance of the Strait should integrate collaborative security frameworks, legal precision, technological advancement, and ecological protections. In the absence of such

multifaceted strategies, the Strait will continue to serve as both a vital artery and a potential source of instability, shaping the trajectory of global energy security in the twenty-first century.

REFERENCES

1. Awan, G. F., Abdullah, W., & Shahab, K. S. U. D. (2025). Iran's naval strategy in the Strait of Hormuz: implications for global maritime security. *Social Science Review Archives*, 3(3), 525-535.
2. Naderi, A. (2026). The price of passage: the legality of Iranian transit charges in the Strait of Hormuz under the Law of the Sea. *Australian Journal of Maritime & Ocean Affairs*, 1-19.
3. Ahmad, A., Williams, T. T., Shahid, A., & Aziz, M. (2026). Military Escalation between Iran and the United States: Risk, Deterrence, and Regional Stability.
4. Al Jazeera. (2026a, August 27). How a 95 percent drop in Hormuz traffic changed global shipping.
5. Aldalala'a, E., & Shukri, M. (2025). Emerging Security Communities in the Middle East: Collective Security and Pragmatic Cooperation. *Middle East Security Review*, 12(3), 201-223.
6. AlGhaniem, R. N. (2026). Toward a New Security Structure in the MENA Region: Challenges and Prospects. *Dirasat: Human & Social Sciences*, 53(4), 1.
7. Ashour, O. (2015). Hybrid Defense and Asymmetric Warfare: Non-State Actors in Contemporary Conflicts. *Journal of Strategic Studies*, 38(1), 1-20.
8. Butt, S. A., & Khan, K. (2026). The Strategic Significance of the Strait of Hormuz in Contemporary Great Power Competition. *Journal of Political Stability Archive*, 4(2), 943-968.
9. Buzan, B., & Wæver, O. (2003). *Regions and powers: The structure of international security*. Cambridge University Press.
10. Cao, Y., Wang, H., Su, F., Fu, D., Yan, F., Hong, X., He, W., Xu, N., Ou, Y., & Chen, C. (2026). Satellite radar and AIS reveal a 97% decline in shipping traffic through the Strait of Hormuz. *The Innovation*. <https://doi.org/10.1016/j.xinn.2026.101367>
11. Churchill, R. R., & Lowe, A. V. (1999). *The law of the sea* (3rd ed.). Manchester University Press.
12. Deligiannis-Virvos, K. (2026, May 6). The closure of the Strait of Hormuz by Iran: Considerations over the law of the sea and law of naval warfare. *Opinio Juris*.
13. Deutsch, K. W. (1957). *Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience*. Princeton University Press.
14. Egwuatu, U. (2026). The Strait of Hormuz as a Strategic Maritime Chokepoint: Implications of Escalating Geopolitical Tensions for Global Shipping. *Available at SSRN 6563258*.
15. Gause, F. G., III. (2010). *The international relations of the Persian Gulf*. Cambridge University Press.
16. Ghobadi, S. (2026). The Absence of a. *Designed Orders: The Political Economy of Iranian Isolation and Crisis Spillover to the Strait of Hormuz (May 28, 2026)*.
17. Government of the Islamic Republic of Iran. (1982). Declaration upon signature of the United Nations Convention on the Law of the Sea. *United Nations Treaty Collection*.
18. Gulf News. (2026, March 11). Oil prices nosedive amid US intervention signals in Strait of Hormuz.
19. Gupta, E. (2008). Oil vulnerability index of oil-importing countries. *Energy policy*, 36(3), 1195-1211.
20. Harel, A., & Inbar, E. (2015). Deterrence in Asymmetric Conflicts: Symbolic Victories and Strategic Instability. *Security Studies Quarterly*, 19(4), 455-478.
21. International Court of Justice. (1949). *Corfu Channel Case (United Kingdom v. Albania)*, Judgment of April 9, 1949. *ICJ Reports 1949*, p. 4.
22. International Energy Agency. (2026, March 11). IEA member countries agree to release 400 million barrels of oil from emergency reserves amid Middle East conflict. *IEA*.
23. International Monetary Fund. (2026). *World Economic Outlook, April 2026: Global economy in the shadow of war*. IMF.
24. Iqbal, M. S., & Ikram, M. R. (2026). Geopolitical Tensions in the Strait of Hormuz: The Iran-US Conflict and Its Impact on the Global Economy. *Social Science Review Archives*, 4(2), 1583-1594.

25. Kaya, F. (2026). Energy Security and Geopolitical Rivalry in the Context of the Strait of Hormuz. *Turkish Studies-Economics, Finance, Politics*, 21(1), 1061.
26. Keohane, R. O., & Nye, J. S. (1977). *Power and Interdependence: World Politics in Transition*. Little, Brown and Company.
27. Krane, J. (2019). *Energy kingdoms: Oil and political survival in the Persian Gulf*. Columbia University Press.
28. Krieg, A. (2025). The Decline of U.S. Leadership and the Rise of Regional Orders in the Middle East. *International Affairs*, 101(2), 389–407.
29. Lassoued, R. (2026). Maritime Chokepoint Insecurity and Systemic Trade Vulnerability: A Transportation Security Assessment of the Strait of Hormuz. Springer.
30. O'Neil, W. D. (2009). Correspondence: Costs and difficulties of blocking the Strait of Hormuz. *International Security*, 33(3), 190–198.
31. Perkovič, M., Gucma, L., & Feuerstack, S. (2024). Maritime security and risk assessments. *Journal of Marine Science and Engineering*, 12(6), 988.
32. Rathnayake, P. (2025). *Maritime Security and Strategy: Perspectives on Policy, Naval Power, and Strategic Security*. Springer Nature.
33. Reisman, W. M. (1980). The Regime of Straits and National Security: An Appraisal of International Lawmaking. *American Journal of International Law*, 74(1), 48-76.
34. Rodrigue, J.-P. (2004). Straits, passages and chokepoints: A maritime geostrategy of petroleum distribution. *Cahiers de géographie du Québec*, 48(135), 357–374.
35. S&P Global Commodity Insights. (2026, July 22). Middle East shipping insurance costs rise on Hormuz risks: Marsh.
36. San Remo Manual on International Law Applicable to Armed Conflicts at Sea. (1994). International Institute of Humanitarian Law.
37. Sasikala, N., Priyadharshini, P., Pradeep, P. V. N., Raaj, R. S., & Hanne, L. S. (2026, June). Crude Disruption: Wartime Supply Chain Collapse in the Strait of Hormuz and Its Cascading Human Consequences. In *2026 International Conference on Emerging Trends in Mobile Computing and Sustainable Informatics (ICEMCSI)* (pp. 1-6). IEEE.
38. Schortgen, F. (2025). Global supply chains and geopolitical dynamics.
39. Shuja, A. (2025). Comparative Strategies of the US, China, and India on the Strait of Hormuz. In *Circumventing the Middle East Chokepoints: Infrastructure, Strategy and Geopolitics* (pp. 31-46).
40. Springer, J. (2019). Cycles of Destruction and Reconstruction: Humanitarian and Strategic Consequences of Repeated Wars in Gaza. *Conflict and Human Security Journal*, 14(2), 77–95.
41. Talmadge, C. (2008). Closing time: Assessing the Iranian threat to the Strait of Hormuz. *International Security*, 33(1), 82–117.
42. Tariq, A. B., Ali, R. M., & Kiran, M. (2025). Geopolitical power struggle and security dilemma in Strait of Hormuz: Implications on Saudi-Iran rivalry and regional order. *Islamic Research Journal {المركز}*, 3(02), 1-15.
43. Trade, U. N. Development. *Strait of Hormuz disruptions: implications for global trade and development*. UNCTAD/OSG/TT/INF/2026/1 (Geneva, 10 March 2026). <https://unctad.org/publication/strait-hormuz-disruptions-implications-global-trade-and-development>.
44. U.S. Department of Defense. (2015). Freedom of Navigation (FON) Program: Fiscal Year 2015 Report.
45. U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs. (1994). Limits in the Seas No. 114: Iran's Maritime Claims.
46. U.S. Energy Information Administration. (2026, August 11). Short-Term Energy Outlook: Global oil markets. U.S. Department of Energy.
47. Ulrichsen, K. C., & Krane, J. (2026). Maritime Chokepoints and Risks to Global Shipping and Energy Security. *Rice University Baker Institute for Public Policy*, March, 16.
48. United Nations Conference on Trade and Development. (2026). Hormuz disruption deepens global economic strain across trade, prices and finance. UNCTAD.

49. United Nations. (1982). United Nations Convention on the Law of the Sea. United Nations Treaty Series, vol. 1833, p. 397.
50. Valbjørn, M., Bank, A., & Darwich, M. (2024). The Axis of Resistance and Regional Alliance Formation in the Middle East. *Journal of Middle Eastern Politics*, 29(1), 33–54.
51. Wang, J. L., Fan, J. J., Liu, Y., Guo, H. T., & Guo, M. Y. (2026). Geopolitical turbulence in the Middle East: Reshaping global energy landscape?. *Petroleum Science*.
52. Yergin, D. (2020). *The new map: Energy, climate, and the clash of nations*. Penguin Press.
53. Zaman, S., & Khan, A. (2026). The Geopolitical Dimension of Maritime Security: Understanding State Interests, Strategic Competition, and Emerging Threats in the 21st Century. *Research Consortium Archive*, 4(2), 242-259.
54. Zouza Roland Clovis, K. (2026). The Geostrategic Position of the Strait of Hormuz in International Relations. *EducJournal*, 1(1), 1–15.