



The Hunt for Economic Security

The Role of Navies in Deterring Threats to the Maritime Economy

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► Key Takeaways

- The maritime domain is currently faced with a wide variety of threats, such as climate change, economic warfare, shadow fleet operations, protection of critical infrastructures, and illicit activities ranging from illegal fishing to piracy.
- Navies suffer from inherent limitations when deterring threats to the global maritime economy: their global presence and permanence limits their credibility in terms of deterrence, their focus usually set on immediate deterrence, implementing deterrence by punishment in and from the naval domain is difficult and costly.
- There are several factors that could help navies mitigate those constraints:
 - * increased reliance on multirole platforms for standard naval operations;
 - * better burden-sharing between actors, allies and partners, navies and the civilian sector;
 - * strategic integration of unmanned systems (UAVs, UUVs, USVs) to create mass.

Introduction

The classic literature in naval and maritime strategy has long identified a strong relationship between the characteristics of naval forces and one of the main features of their political utility,¹ namely protecting sea lines of communication in order to enable trade, and thus wealth.² Alfred Thayer Mahan went so far as to argue that the core purpose of a navy is to enable maritime trade and economic growth.³ However, the modern maritime economy faces a range of threats that naval forces must confront: climate change, economic warfare, shadow fleet operations, the vulnerability of critical infrastructures, and illicit activities like piracy and illegal fishing.

In principle, the strategic practice of deterrence offers a cost-effective means to address these challenges. Yet, we argue that achieving deterrence against threats to the maritime economy is fraught with difficulties stemming from the very nature of naval power. Building on the conceptual literature on deterrence, we identify those challenges and explore how navies can effectively deter threats to the maritime economy. Ultimately, deterring threats to the maritime economy with naval platforms is difficult, but some steps can be taken to reduce the magnitude of the challenge.⁴

Threats to the maritime economy

The maritime domain is critical for global trade, with 90% of the world's commodities and consumer goods moving by sea.⁵ It is under threat from a combination of climate events, geopolitical competition and confrontation, and spillovers from regional conflicts, particularly in major trade corridors. These threats belong to five major categories: climate change, economic warfare, shadow fleet operations, protection of critical infrastructures, and illicit activities ranging from illegal fishing to piracy.

First, climate change significantly affects the maritime economy, introducing challenges that range from disrupted shipping routes to damaged infrastructure. Rising sea levels pose a direct threat to ports and coastal facilities. Additionally, the increased frequency and intensity of extreme weather events, such as hurricanes and typhoons, can severely disrupt shipping schedules, damage vessels, and endanger crews. Warmer ocean

1. Ken Booth famously distinguishes between the diplomatic, policing and military roles of the navies. See K. Booth, *Navies and Foreign Policy*, London: Croom Helm Publishing, 1976.

2. A. Lambert, *Seapower States: Maritime Culture, Continental Empires, and the Conflict That Made the Modern World*, Yale: Yale University Press, 2018. On the relationship between political and commercial spheres of influence, see D. C. Copeland, *A World Safe for Commerce: American Foreign Policy from the Revolution to the Rise of China*, Princeton: Princeton University Press, 2024.

3. J. T. Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*, Baltimore: Johns Hopkins University Press, 1997.

4. In this paper, we adopt a broad perspective, and recommendations should be tailored to specific situations.

5. *Review of Maritime Transport: Navigating Maritime Chokepoints*, UN Trade and Development, 2024.

temperatures and shifting currents also impact marine ecosystems, altering fish migration patterns and threatening the sustainability of fisheries.

Second, the centrality of the sea as a major trade route makes it an obvious target for economic warfare, defined as economic privations imposed with a military objective, regardless of whether that objective is attrition, denial, or compellence. Since October 2023, Houthi militants in Yemen have attacked vessels in the Gulf of Aden and the Babel-Mandab straits at the Southern end of the Red Sea, in response to Israel's military action in Gaza.⁶ The threat of Houthi violence has made shipping companies re-route via the Cape of Good Hope, adding 9-17 days to transit time. The ability to impose costs on maritime traffic is facilitated by the proliferation of advanced technologies (such as missiles and drones) to non-state actors, and we should expect similar types of threats in the future.⁷ Similarly, the South China Sea carries approximately 33% of global shipping, and is especially important for trade amongst China, Japan, Taiwan and South Korea. Beijing attempts to exercise control over the South China Sea and has engaged in increasingly aggressive actions in the area, prompting concerns over the potential for escalation to full-scale conflict.⁸ Particularly sensitive is the Taiwan Strait to the north of the South China Sea. Approximately 20% of global maritime trade moves through the Taiwan Strait, including 90% of the world's advanced semiconductor inputs and outputs.⁹ Any disruption to freedom of navigation in the Taiwan Strait and South China Sea would have serious consequences for the global economy.

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When it comes to shadow fleet operations, Russia has since 2022 endeavored to circumvent wide-ranging economic sanctions, in part through the extensive use of the "shadow fleet," aging cargo vessels with insufficient insurance, unclear ownership, and sailing under flags of convenience.¹⁰ The shadow fleet's aging and poorly maintained vessels increase the risk of accidents, and the misuse of the automatic identification system (AIS) by vessels raises the likelihood of collisions and other incidents. States have limited legal recourse to block or ban the passage of suspected shadow fleet vessels.¹¹

Critical undersea infrastructure, such as telecommunications cables and pipelines, is also vulnerable to disruption and destruction, from natural disasters to accidents,

6. Centre for Preventative Action, "Conflict in Yemen and the Red Sea," Council on Foreign Relations, October 2024.

7. A. K. Cronin, *Power to the People: How Open Technological Innovation is Arming Tomorrow's Terrorists*, Oxford: Oxford University Press, 2019.

8. T. Denamiel and E. Brown, "The State of Maritime Supply Chain Threats", Centre for Strategic and International Studies, November 2024.

9. Ibid.

10. C. Cook and D. Shepard, "Russian Dark Fleet Lacks Disaster Insurance, Leaks Suggest", *Financial Times*, March 15, 2024, available at: www.ft.com.

11. E. Braw, "Russia's Growing Dark Fleet: Risks for the Global Maritime Order", *Issue Brief*, Atlantic Council, January 2024.

terrorism, and “grey zone” or subthreshold acts of sabotage. Dislocation of this infrastructure would negatively impact dependent economies. Protecting this infrastructure is challenging as rights and obligations are legally diffuse and require coordination between multiple civilian agencies.¹²

Finally, the return of geopolitical contest to the seas has not eliminated risks associated with criminality, from illegal fishing to piracy, drug- and human-trafficking and smuggling. These activities persist, especially in the Straits of Malacca, the Gulf of Aden, the Gulf of Guinea, the Guardafui Channel, the English Channel and the Mediterranean, perpetrated by non-state actor groups and criminal networks.¹³

Combined, those threats can end up undermining the global maritime economy, but can navies be used as a deterrent against them?

The naval deterrence challenge

Fundamentally, deterrence can be defined as “a coercive strategy, based on threat of retaliation, to keep a target from changing its behavior”.¹⁴ In principle, deterrence promises a lot: by issuing well-calibrated threats, an actor can constrain their rivals’ behavior and shape their preferences, without having to resort to the always tremendously costly war. Deterrence would thus be a very cost-efficient exercise of power, which makes it a very attractive statecraft practice. Yet, the practice of deterrence contains its own limitations: because it is an appealing cost-effective tool of statecraft, actors who have no intention to initiate a war might still be tempted to bluff and posture to get the benefits of deterrence. But targets might call the bluff, dismiss the threats as cheap talk and issue a challenge. The practice of deterrence is thus a carefully calibrated dynamics of signaling and credibility: deterrence is ultimately in the eyes of the beholder.

There are some key concepts associated with the theoretical literature on deterrence¹⁵ that are useful to understand the naval deterrence challenge. The first one is the notion of *threats and assurances*. Deterrence relies on both the ability to issue credible threats if a specific condition is not met and the assurance not to harm the target if a condition is met. The second is the notion of *temporality*, which allows the distinction between immediate and general deterrence. Immediate deterrence is a situation in which a challenger has initiated a militarized crisis, and the defender is issuing threats to force

12. C. Bueger, “NATO’s Contribution to Critical Maritime infrastructure Protection,” Centre for Maritime Strategy, January 2024.

13. M. Sosnowski, G. Petrossian, T. Nunphong and E. Piza, “Crimes at Sea: Exploring the Nexus of Maritime Crimes Across Global EEZs,” *Marine Policy*, Vol. 166, 2024.

S. Parker, S. Bennett, C. M. Cobden and D. Earnshaw, “It’s Time We Invested in Stronger Borders’: Media Representations of Refugees Crossing the English Channel by Boat”, *Critical Discourse Studies*, Vol. 19, No. 4, 2021, pp. 349-350.

14. R. J. Art and K. Greenhill, “Coercion: An Analytical Overview”, in K. Greenhill and P. Krause (eds.), *Coercion: The Power to Hurt in International Politics*, Oxford: Oxford University Press, 2018, p. 5. Nuclear deterrence is a subset of broader deterrence dynamics.

15. For a useful summary, see T. D. Biddle, “Coercion Theory: A Basic Introduction for Practitioners”, *Texas National Security Review*, Vol. 3, No. 2, 2020, pp. 94-109.

the challenger to back down, while general deterrence is a posture designed to prevent a challenger from initiating a crisis. Immediate deterrence situations are more delicate to solve because the challenger is already committed to the action, has probably calculated that they have more resolve and/or resources, and has a reputational stake in not backing down. The third one is the notion of *means*. Literature usually distinguishes between deterrence by punishment and deterrence by denial. Punishment refers to the notion that the guaranteed retaliation significantly outweighs the benefits of an attack, which forces a rational actor not to issue a challenge: this is the logic of nuclear deterrence. Denial is the threat of being able to successfully prevent aggression or defend against it. The logic is to convince that no matter how hard they try, the challenger will fail in their attempt. Deterrence by punishment simply requires the ability to credibly impose costs, while deterrence by denial requires a war-fighting capability sufficient to convince a challenger that they cannot win.

To properly understand the naval deterrence challenge, the specific characteristics and attributes of naval forces must be considered. Fundamentally, naval forces are characterized¹⁶ by their:

- Mobility sustained over a long period of time;
- Lift capacity;
- Relative persistence (although ships cannot “control” territory as land forces do);
- Versatility;
- Cost.

This specific nature of naval forces contributes to their difficulty in successfully deterring threats against the maritime economy. It goes without saying that the deterrence challenges listed here only relate to threats *against the maritime economy*: the nature of certain naval assets (such as SSBNs) makes them particularly useful to enforce nuclear deterrence. But issuing nuclear threats to protect the maritime economy would not be credible, and we thus exclude the nuclear role of some navies from the analysis.

First, because of their potentially global reach, navies go a long way in creating political influence, but it comes at the cost of credibility. Indeed, navies can intervene (almost) everywhere, but it makes it unclear whether they will intervene anywhere, which might incentivize adversaries to call the bluff and initiate a deterrence challenge. This is particularly true when it comes to securing the maritime economy, which adversaries can perceive as a “soft target” compared with more fundamental national interests. Thus, “even as the inherent flexibility of sea power increases a nation’s influence, it also heightens uncertainty about where, when, and what action will take place. Uncertainty about intentions, in turn, raises the likelihood that opponents will miscalculate about

16. I. Speller, *Understanding Naval Warfare*, Abingdon: Routledge, 2014, pp. 28-31.

resolve or underestimate the local balance of power”.¹⁷ In other terms, navies are imperfect instruments to credibly issue threats and insurances, which is a core issue for successful deterrence.

Second, navies cannot simultaneously contribute to general and immediate deterrence. A general deterrence posture would involve immense resources to achieve absolute control of sea lines of communication, which is an impossible threshold to meet, even for the US Navy. This means that navies may be called upon to reestablish immediate deterrence against challengers having already initiated a crisis, which is an inherently more difficult endeavor.

Third, naval platforms are versatile in terms of weapons systems (they can encompass a range of capabilities), which makes them “jack-of-all-trades” well suited for warfighting, and thus deterrence by denial. Navies can thus combine defensive and offensive actions to both avoid losses and degrade the adversary’s combat power. Navies can attempt to frustrate an adversary’s military power in different ways:¹⁸ they can contribute to denying the adversary access to key capabilities by controlling sea lines of communication; they can establish operational paralysis by creating areas of superiority

and denying their access to the adversary; and they can engage in tactical degradation through targeted strikes from the sea. The problem with this form of deterrence is that it is quite capability-intensive and costly, since it requires a high operational tempo and a wide range of capabilities (from mine warfare to long-range strikes). Yet, navies can also use punishment if needed. Historically, the primary means for

Navies are more likely to engage in deterrence by denial

navies to impose costs is through the long-standing practice of naval blockades,¹⁹ which disrupt trade and constrain access. Yet, blockades are also challenging to implement:²⁰ depending on the target, trade can be redirected; it can be difficult to distinguish and prioritize between civilian ships to inspect; and a blockade can create negative externalities (such as an economic slowdown) which can also hurt the blocking country in the context of interconnected economies. Also, a blockade requires committing credibly to a long-term engagement, which is difficult, as discussed above. Thus, while in principle being able to engage in both deterrence by denial and deterrence by punishment, navies are more likely to engage in the former, despite its costs, because of the inherent difficulties in imposing costs in and from the naval domain.

17. E. Gartzke and J. R. Lindsay, *Elements of Deterrence: Strategy, Technology, and Complexity in Global Politics*, Oxford: Oxford University Press, 2024, p. 233.

18. S. Zilincik and T. Sweijts, “Beyond Deterrence: Reconceptualizing Denial Strategies and Rethinking Their Emotional Effects”, *Contemporary Security Policy*, Vol. 44, No. 2, 2023, pp. 248-275.

19. B. A. Elleman and S. C. M. Paine (eds.), *Naval Blockades and Seapower: Strategies and Counterstrategies, 1805–2005*, Abingdon: Routledge, 2006.

20. G. Collins, “A Maritime Oil Blockade against China—Tactically Tempting but Strategically Flawed,” *Naval War College Review*, Vol. 71, No. 2, 2018.

To summarize, navies face important difficulties when deterring threats to the global maritime economy, which stem from their comparative lack of credibility, the fact that they usually must respond to immediate deterrence challenges, and the greater likelihood of engaging in a capability-intensive deterrence by denial.

Closing the deterrence gap at sea

Deterring contemporary threats to maritime security is challenging, because of the nature of naval power, but also because it involves a multiplicity of actors. For example, preventing shadow fleet operations involves an evolution of legal frameworks that have nothing to do with naval forces. However, there are three key policy options for navies to close the deterrence gap against several of the five identified threats: assessing the importance of multirole platforms in the force structure, developing partnerships (including with private actors), and betting on unmanned systems to create mass.

Table: Challenges of Deterring Threats to the Maritime Economy

Threat Category	Deterrence challenges
<i>Climate Change</i>	Climate change is a risk posed by human-driven behaviors, but is not a conscious threat per se, and therefore cannot be "deterred".
<i>Economic Warfare</i>	Asymmetric threats from non-state actors using advanced technologies (e.g., missiles, drones); difficulty in maintaining presence in key chokepoints.
<i>Shadow Fleet Operations</i>	Legal complexities regarding flags of convenience; inability to enforce regulations in international waters; evasion tactics such as AIS disablement.
<i>Protection of Infrastructure</i>	Large scale and dispersed nature of undersea cables and pipelines; lack of dedicated monitoring assets; legal ambiguities over responsibilities.
<i>Illicit Activities</i>	Limited patrol resources over vast areas; adaptability of criminal networks; jurisdictional challenges in international waters.

First, navies need to think long and hard about multirole platforms. Multirole naval platforms, such as modern frigates or corvettes, are designed to perform a variety of missions, and enable navies to respond to a wide range of threats without requiring a highly specialized fleet. This is especially important for maritime security in dynamic environments, such as the South China Sea, where adversaries might present both asymmetric and conventional threats. However, while multirole vessels excel in low- to medium-intensity operations, their ability to handle large-scale warfare may be limited due

to reduced armor, firepower, or endurance compared to specialized ships. For navies operating in regions with diverse security challenges (e.g., piracy, gray zone conflicts, humanitarian crises), multirole platforms are invaluable. However, navies anticipating high-intensity warfare with advanced adversaries (e.g., the U.S. Navy *vis-à-vis* China or Russia) may prioritize specialized ships to maintain technological superiority. Modular designs allow multi-role vessels to remain cost-effective while mitigating the trade-off in specialization. Advanced modular systems, such as the Danish StanFlex system, allow navies to tailor vessels for specific tasks without requiring entirely new ship classes. Multirole platforms are optimal for navies facing diverse, non-traditional threats and resource limitations. However, specialized capabilities are essential for high-intensity combat scenarios and maintaining technological superiority against advanced adversaries.

Second, credible maritime deterrence requires persistent presence. However, this is a resource and capability-intensive commitment for a single naval force to undertake. A possible solution could be burden-sharing among allies and partners, as demonstrated in counter-piracy missions Operation Atalanta and Combined Task Forces 150 and 151, and Operation Prosperity Guardian against Houthi forces in the Red Sea and Gulf of Aden.²¹ Naval coalitions are a historical pattern designed to increase presence and

deterrence capabilities.²² Hence, states can encourage the formation of regional coalitions, such as an expanded version of the Combined Maritime Forces (CMF), to address shared threats. These coalitions can focus on specific challenges like piracy, shadow fleet operations, and illegal fishing, allowing member states to pool resources and expertise. Naval coalitions can divide responsibilities for patrolling vital chokepoints, such as the Strait of Hormuz, the Bab-el-Mandeb Straits, and the South China Sea. Rotational deployments and

Naval coalitions are an option to increase presence and deterrence capabilities

shared bases can reduce the strain on individual navies while ensuring a constant presence in contested waters. In that context, Private Marine Security Companies (PMSC) seem, at first glance, a potential force multiplier. Navies can legally incorporate PMCs as “auxiliary forces” under international law, ensuring oversight and accountability. These PMCs can provide armed escorts for vulnerable vessels in high-risk areas, freeing naval resources for broader operational tasks. For example, PMCs could protect merchant ships from piracy in the Gulf of Aden, while naval forces focus on countering economic warfare threats.

Third, unmanned systems, including Unmanned Aerial Vehicles (UAVs), Unmanned Surface Vessels (USVs), and Unmanned Underwater Vehicles (UUVs), offer transformative capabilities for modern navies. By integrating these systems into fleet operations, navies can enhance surveillance, improve response times, and mitigate risks

21. W.-C. Paes, E. Beales, F. Hinz, and A. Vidal, “Navigating Troubled Waters: The Houthis’ Campaign in the Red Sea and the Gulf of Aden,” International Institute for Strategic Studies, December 2024.

22. B. A. Elleman and S. C. M. Paine (eds.), *Naval Coalition Warfare: From the Napoleonic War to Operation Iraqi Freedom*, Abingdon: Routledge, 2007.

to personnel. Unmanned systems can provide continuous monitoring of critical maritime zones, such as chokepoints (e.g., the Bab el-Mandeb Strait, the Strait of Hormuz) and Exclusive Economic Zones (EEZs). UAVs equipped with high-resolution cameras, radar, and infrared sensors can detect illegal activities such as smuggling, piracy, and illegal fishing. USVs can patrol defined areas autonomously, while UUVs can monitor undersea activities like cable tampering or submarine movements. UUVs are also critical for monitoring and protecting undersea infrastructure, such as telecommunications cables and pipelines. These systems can detect physical damage, monitor for sabotage attempts, and carry out repair assistance in difficult-to-access locations. Finally, unmanned systems are ideal for countering gray zone tactics, where adversaries use unconventional methods like unmarked vessels, fishing fleets, or covert submarine operations. UAVs can surveil contested waters without escalating tensions, while UUVs can track underwater incursions covertly. USVs can act as decoys to draw attention away from higher-value assets. Unmanned systems represent a paradigm shift in naval operations, enabling persistent presence, reduced costs, and enhanced capabilities across various mission types. By integrating UAVs, USVs, and UUVs strategically, navies can create mass and close some of the deterrence gaps associated with the protection of the maritime economy.

Conclusion: managing expectations

As we have argued, the very nature of naval forces makes deterrence to threats against the maritime economy challenging: versatility reduces credibility; limited means imply mainly responding to immediate deterrence challenges; and primarily engaging in deterrence by denial is difficult. Moreover, some key threats (such as climate change or shadow fleets) are best tackled by other means than the use of naval power. We should thus have realistic ambitions about the role of navies in deterring threats to the maritime economy: it is a complicated endeavor, and deterrence failures are bound to happen. Those limitations should be clearly communicated to policymakers in order to manage expectations. Nevertheless, multirole platforms, cooperation and robotization can all help alleviate major difficulties by providing presence, signaling credibility and reducing costs through mutualization. They are not perfect fixes, but they can contribute to an improved deterrence posture.

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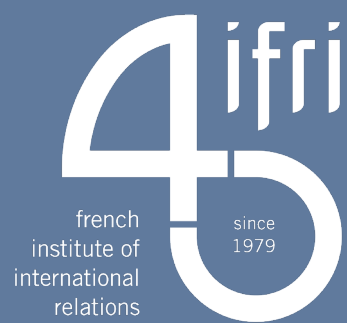
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