European Commission

Study on flag State responsibilities and 'open registers' for vessel registration

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Contents

List of Tables

List of Figures

1. Introduction

The main objective of this study is to provide the contracting authority and the European Commission (in particular the Directorate General for Maritime Affairs and Fisheries) with an up-to-date analysis of the economic dynamics and the effects of the use of so-called “open registers” for sea-going vessels (often closely related to “flags of convenience”).[1] It also compares open registers used as flags of convenience with national (closed) registers, highlighting their differences and implications. The study responds to the EU’s strategic priorities outlined in the June 2022 international ocean governance agenda. The Joint Communication of the Commission and the High Representative for Foreign Affairs and Security Policy on international ocean governance,[2] specifically identified the fulfilment of flag States responsibilities by those acting as open registers as one of the priorities for the EU International Ocean Governance agenda. It announced the Commission’s intention to launch a “*study exposing the models of operators using open registers and the various actors involved in the functioning of these registers, as well as proposing solutions to address problems identified*”.

The study, therefore, aims to assess the drivers and effects associated with open registers used as flags of convenience. Recognising the complex, often opaque landscape — characterised by limited transparency, biased industry reports, and sector-specific sensitivities — this analysis focuses on understanding their impacts on economic, social, environmental and security policy objectives of the European Union (EU) and relevant international frameworks.

The use of the term "open registers" in this document does not imply or suggest in any way any substandard practices by EU Member States that utilise open registers. The term is used without any judgment or assumption about the quality, integrity, or effectiveness of the practices implemented by these Member States.

a) Background

Although there is no agreed definition of the term flag of convenience (FOC), it is commonly used to designate the use of a place, jurisdiction, state or country as a nominal (in name only) "home base" for one's operations or charter, even though no or virtually no business is conducted in this country. In the maritime field, this relates to shipowners registering a vessel in a ship register of a country designated as a flag of convenience (see Table 2).

It is important to clarify from the onset that the terms open registers and flags of convenience are closely related but are not the same. An open register is a type of ship register that allows foreign-owned ships to be registered under a country’s

[1] The terms open register (OR) and flag of convenience (FOC) are used interchangeably in this report.

[2] EUR-Lex - 52022JC0023 - EN - EUR-Lex (europa.eu)

flag, even if the ship has no direct connection to that country (e.g. the owner is not a national). Despite the lack of an agreed definition, a flag of convenience most commonly refers to the practice of a shipowner registering a ship in a country other than their own to benefit from lax regulations, lower taxes, and usually cheaper labour. This practice typically involves using an open register. It is crucial to underline that all flags of convenience use open registers, but not all open registers are necessarily used as flags of convenience. This study focuses on open registers used as flags of convenience.

A second important clarification is required regarding the distinction between open and closed (or national) registers. Open registers are open to foreign shipowners, regardless of the owner's nationality or residence, and are generally designed to attract foreign owners by offering more favourable conditions and simplified procedures. A closed (or national) registry is restricted to ships owned by nationals or residents of that country. They usually require the owner or the ship to have a direct link to the country, such as the owner’s citizenship or the company being registered there. The terms “closed” and “national” registers are used interchangeably.

When shipowners can easily and quickly change their ship’s flag, often to reduce costs and avoid flag State laws and obligations, this is referred to as “flag hopping”.

There are many reasons why shipowners register their ships in a different country. Overall, it can be said that it is to benefit from more favourable rules (each ship being subject to the laws of that country), including the non-ratification of international conventions, as compared to the shipowner’s home country. Interest can also arise from different factors: less strict regulations on labour (for example the ability to hire crews from lower-wage countries and apply substandard labour conditions); lower requirements in terms of safety; weaker law enforcement by some flag States allowing for (goods & human) trafficking; less strict regulation related to pollution and to the scrapping of vessels; and tax avoidance and evasion. Fishing vessels are also registered in countries as a means of seeking less fisheries controls (monitoring, control and surveillance) and compliance with conservation and management measures put in place by countries in waters under national jurisdiction or by Regional Fisheries Management Organizations (RFMO).[3]

Countries have different reasons to host registers. Granting its “nationality” to a vessel is a long-standing prerogative of each State, and States have traditionally applied restrictions and conditions for registering vessels. The modern practice of registering a vessel in a foreign country dates back to the 1910s, when Panama registered U.S. owned ships that wanted to escape the alcohol prohibition. The

[3] A Regional Fisheries Management Organisation (RFMO) is an international body formed by countries with fishing interests in a specific region to establish binding measures for the conservation and sustainable management of fish stocks, particularly highly migratory or straddling species.

practice significantly took off in the 1950s, with a similar move to Liberia to escape U.S. labour laws. The fleet register was an American corporate structure involving a joint venture with the Liberian government, with revenue partly allocated to the government and used to fund social programmes in Liberia.

Open registers are often operated by private sector firms. By outsourcing their fleet register to independent corporations, states effectively relinquish part of their sovereign authority. However, most countries are willing to forgo sovereignty in return for revenue from registration fees and the economic activity generated in their ports. Despite having ratified relevant international maritime and labour conventions, FOC countries often lack the resources and/or political will to enforce international law effectively. Shipowners view this as a comparative advantage, as FOC countries have little incentive to end such practices if they want to retain their "client" base.

Overall, the world fleet registered in developing countries accounts for approximately 75% of the total world fleet. It is estimated that the top 6 countries, listed by the number of ships registered, account for more than 50% of the world's ships and tonnage. In 2021, more than half of all ships owned by Japanese entities were registered in Panama, 25% of ships owned by Greek entities were registered in Liberia and another 22% in the Marshall Islands, which are the countries that registered the most substantial increase in registration over the last decade.[4]

With the steady expansion of convenient flagging in the second half of the 20th century, the idea of circumscribing the margin of freedom of flag States arose as a means to reintroduce fairer competition with traditional (developed) maritime States or with developing States wishing to expand their own maritime fleet and trade. The requirement of a "genuine link" of an economic and social nature became a sensitive and contentious issue in the context of the negotiation of the Geneva Convention on the High Seas (1956), its successor the United Nations Convention on the Law of the Sea (UNCLOS) (1982)[5] and the aborted United Nations Convention on Trade and Development (UNCTAD) Convention on the Conditions for Registration of Ships (1986).[6]

Under UNCLOS, each State is entitled to determine conditions for granting its nationality to ships. It is also generally recognised that a State may not grant its

[4] Merchant fleet – UNCTAD Handbook of Statistics 2022 — https://hbs.unctad.org/merchant-fleet/

[5] The United Nations Convention on the Law of the Sea (UNCLOS), also called the Law of the Sea Convention or the Law of the Sea Treaty, is an international treaty that establishes a legal framework for all marine and maritime activities. As of October 2024, 169 sovereign states and the European Union are parties, including all major powers except the United States.

[6] The UNCTAD Convention on the Conditions for Registration of Ships was aborted because it failed to gain enough ratifications from major maritime nations, largely due to opposition from shipping interests who saw its stricter flag-state requirements as economically and politically unfavorable- https://unctad.org/system/files/official-document/tdrsconf23_en.pdf

nationality to a ship which has already been granted the nationality of another State. From this requirement,[7] it is derived that ships must sail under the flag of one State only.[8] Article 91(1) of UNCLOS provides the requirement of a "genuine link" between the flag States and the ships flying their flag. The need for a genuine link between a ship and its flag State is to secure more effective implementation of the duties of flag States. Yet, UNCLOS[9] does not specify the concept of a genuine link.

The absence of international consensus on the definition of a "genuine link" between a ship and a State[10] led to the development of alternatives to regulating ship registration. On the one hand, traditional maritime states developed "second registers", which offer more favourable fiscal conditions to their national fleets engaged in international shipping. This helped shipowners reduce their costs, thus rebalancing international competition and preventing a further increase in transfer to FOC. On the other hand, traditional maritime states pressed for the upgrading of international rules on the safety of navigation, pollution, crew manning, and port state control, among other measures, to increase the responsibilities of shipowners, flag States, and port States.

Nevertheless, the erosion of the genuine link has continued, and ship registration is nowadays primarily a business decision: shipowners choose a registration service and a jurisdiction that will minimise costs and risks. This decision is part of a global market of demand and supply of ship registers involving not only flag

[7] Article 91 on the nationality of ships of UNCLOS specifies that

1. Every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship.
2. Every State shall issue to ships to which it has granted the right to fly its flag documents to that effect.

https://www.un.org/depts/los/convention_agreements/texts/unclos/unclose.pdf

[8] Article 92 on the Status of ships:

1. Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas. A ship may not change its flag during a voyage or while in a port of call, save in the case of a real transfer of ownership or change of registry.
2. A ship which sails under the flags of two or more States, using them according to convenience, may not claim any of the nationalities in question with respect to any other State, and may be assimilated to a ship without nationality.

[9] M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines v. Guinea), Judgment, ITLOS Reports 1999, para. 83. [ITLOS Reports are the official published records of the International Tribunal for the Law of the Sea (ITLOS). They contain the Tribunal's judgments, orders, and advisory opinions, along with related procedural details].

[10] See International Tribunal for the Law of the Sea (ITLOS), M/V "Virginia G" (Panama/Guinea-Bissau), Judgment, ITLOS Reports 2014, p. 4, para. 113: "In the view of the Tribunal, once a ship is registered, the flag State is required, under article 94 of the Convention, to exercise effective jurisdiction and control over that ship in order to ensure that it operates in accordance with generally accepted international regulations, procedures and practices. This is the meaning of 'genuine link'."

States and shipowners but also service providers. Indeed, some of the largest registers are established and managed by foreign private companies, which outsource contracts on behalf of economically vulnerable countries, offering a privacy shield to vessel operators to protect their business structure and operations from scrutiny.

Extensive research has been carried out on the subject of flags of convenience and open registers for many years. But until now, research has focused principally on sectoral aspects. The study, which focuses on the international scene, outside the EU, complements the comprehensive body of knowledge on this subject by:

1. Identifying the drivers that lead the various economic and public actors to support open registers, and
2. Analysing the effects on the EU's objectives – economic, social, environmental, security, political – in key policy areas, as well as the cumulative effects of this combination of drivers on key policy objectives set out at the international and EU level

The Annex to the study provides an empirical supplement to Chapter 1 (Drivers for and models of use of open registers) and Chapter 2 (Analysis of the effects of open registers on EU policies and international frameworks). In particular, the Annex describes the technical underpinnings and empirical validation for the study's methodological approach, providing transparency and replicability of findings presented.

The information and views set out in this study are those of the authors and do not necessarily reflect the official opinion of the European Commission.

b) Methodology

The methodology of this study is grounded in a comprehensive qualitative and quantitative approach aimed at analysing the current market trends and relevant statistics, as well as the impact of the proliferation of open registers in global shipping. This integrative framework combined desk-based legal and policy analysis, data evaluation, and qualitative stakeholder engagement.

At the core of the methodology lies an extensive literature review, encompassing academic research, policy papers, legal commentary, and grey literature. This review served both to synthesise existing knowledge and to identify critical gaps, particularly in the interdisciplinary intersections of maritime law, international governance, labour standards, and environmental compliance. Notably, the study complements the existing sectoral literature by adopting a cross-cutting perspective that links economic, social, and regulatory dimensions of flagging practices.

Data analysis was based on reliable international databases, including UNCTAD, SIN Clarksons,[11] IHS Sea-Web,[12] EMSA THETIS,[13] and Equasis.[14] These data sources provided the statistical foundation for assessing registration trends by deadweight and gross tonnage,[15] ownership, safety and environmental performance, and Port State Control (PSC)[16] performance. A sectoral breakdown was also conducted, with metrics tailored to specific segments, e.g., fishing hours for fisheries, to ensure methodological appropriateness and enable comparisons with other relevant sources.

Sections 1 and 2 of the Annex provide detailed information on the data sources supporting this study and on the literature reviewed.

To complement the quantitative assessment, the study incorporated structured focus groups and semi-structured interviews with a diverse range of industry experts. These engagements provided valuable qualitative insights, validated findings, and guided further the research effort; the goal was to ensure operational pragmatism in the analysis.

Methodological challenges were acknowledged and addressed throughout the project. Principal issues were related to data fragmentation and limited access to datasets, particularly concerning specific segments of the fleet, such as fishing vessels, as well as concerns of special interest, including ship recycling and the abandonment of seafarers. Remedies included cross-checking of sources, the development of proxy indicators, and cross-validation of data and information. Moreover, several of these methodological clarifications and caveats are elaborated in the Annex, specifically in sections 3.3 (on world fleet statistics), sections 5.1–5.3 (on fisheries data), section 6 (on ship recycling data), and sections 8.2 and 8.3 (on labour and abandonment statistics).

[11] SIN Clarksons (or SIN) refers to Clarksons Research's *Shipping Intelligence Network*, the company's platform providing independent data and analysis on global shipping markets, trade flows, freight, vessel earnings, asset values, and related macro-economic trends.

[12] Sea-webTM is a comprehensive online maritime database from IHS that integrates detailed information on over 220,000 ships, ownership structures, shipbuilders, ports, movements, fixtures, casualties, and maritime companies, making it the industry's largest and most authoritative reference tool for maritime data and intelligence. This data source is identified in the report by the term IHS, IHS Sea-web, and/or Sea-web.

[13] THETIS is a system developed by EMSA to support the Inspection Regime for seagoing ships in the EU. It provides targeting, reporting, monitoring and statistics on inspection results and performance.

[14] Equasis is a free online system that consolidates safety and performance data on ships from public and private sources.

[15] Deadweight tonnage (DWT) is the total weight a ship can safely carry—including cargo, fuel, water, provisions, passengers, and crew—excluding the ship's own weight, while gross tonnage (GT) is a dimensionless measure of a ship's overall internal volume, calculated based on the total enclosed spaces, and is not a measure of weigh.

[16] Port State Control (PSC) is the inspection regime by which national maritime authorities inspect foreign ships visiting their ports to verify compliance with international regulations on safety, pollution prevention, and crew working and living conditions.

In sum, the methodological effort and approach were envisaged to ensure a high degree of internal validity, empirical robustness, and contextual relevance.

Chapter 1 - Drivers for and models of use of open registers

A ship must be registered in a State for legal recognition, regulatory oversight, and international compliance. This registration — often referred to as flagging — means the ship sails under the laws and authority of that country (the flag State). Registration is handled by national maritime authorities, which have the obligation to protect the ship under international law. This registration links the ship to the State's registry and places the vessel under the State's regulatory oversight. The right of a State to register ships also implies duties and responsibilities, as per Article 94 of UNCLOS, which refers to effectively exercising its jurisdiction and control in administrative, technical and social matters over ships flying its flag. These duties include maintaining a register of ships, ensuring that ships under its flag are seaworthy, observing and inspecting conformity with generally accepted international regulations and practices, and conducting incident investigation analyses in cases of incidents or casualties involving their registered vessels.[17]

Historically, the evolution of open registers has illustrated how maritime practices have adapted to meet the changing needs and strategies of shipowners and nations within the context of global trade and regulation.

The concept of "false flags" originated in the 16th and 17th centuries, when ships used deceptive national flags in warfare and evolved to include espionage and covert operations. In the early 20th century, the practice of registering ships in foreign countries for economic or regulatory advantages emerged, with U.S. shipowners using the Panama registry to legally transport alcohol during Prohibition. The Danzig Registry, an early example of an open registry, enabled ships to evade World War I reparations and confiscations, laying the groundwork for future registers, such as Panama's.

After World War II, open registers grew as countries like Panama, Liberia and Honduras offered low taxes and lenient labour laws, creating a business model that attracted foreign shipowners. The term "flag of convenience" dates back to the Napoleonic Wars. It gained modern relevance as shipowners sought to avoid strict regulatory frameworks. In the 1940s, the International Transport Workers' Federation (ITF)[18] began campaigning against open registers, arguing that they offered low labour standards. Overall, the terminology and practices associated with ship registration reflect a progression from tactical deception in naval warfare (such as camouflage, or ‘wrong’ and ‘disassemble’, or ‘false flags’) to economic optimisation in commercial shipping.[19]

[17] Additional details are included in Annex section 3.1.

[18] The International Transport Workers’ Federation (ITF) is a global trade-union federation that represents transport workers across all modes of transport, connecting more than 700 affiliated unions from around 150 countries to advance workers’ rights, equality and safety in the transport sector.

[19] Additional details are included in Annex section 3.1.

This is rooted in various interpretations of the term “genuine link” by States, which have resulted in different approaches to the registration of ships. An elementary classification of these approaches can be outlined as follows:

1. National (closed) registers (NR) treat the shipping company in the same way as any other business registered in the country. Specific special incentives or subsidies may be available; however, the shipping company is generally subject to the full range of national legislation covering financial, corporate, and employment regulations.

2. Open registers offer shipowners a commercial alternative to registering under their national flag, and they charge a fee for this service. The terms and conditions depend on the State’s policy governing the open registry. The State may delegate the task of operating the registry to a private entity. The success of an open registry depends on attracting international shipowners and gaining the acceptance of the regulatory authorities.

3. International registers are a secondary or alternative registry operated by a sovereign State, typically in addition to its national registry. It is designed to attract shipowners who operate internationally while still adhering to stricter oversight compared to open registers. The registering State retains significant oversight, enforcing regulatory compliance, safety, and labour standards. Ships registered under international registers often follow international maritime conventions and maintain higher transparency compared to open registers. Flexible employment of foreign crews is typically allowed, but often within the limits of national or regional labour laws. The aim is to provide a national flag environment that offers shipowners the commercial advantages available under an open registry.

4. While UNCLOS only allows a ship to sail under one State flag (Article 92(2)),[20] certain national systems have developed specific administrative tools to facilitate parallel (bareboat) registration, to facilitate parallel

[20] Article 92(2) is a crucial provision in addressing the abuse of ship nationality especially on the high seas. It ensures that ships which change or uses more than one flag for the sake of convenience cannot claim the nationality of a particular state. Instead, such ships are classified as stateless and lose the legal privileges and protections normally accorded to registered ships under international law. The background to Article 92 is the principle that ships on the high seas are subject to the exclusive jurisdiction of their flag State. However, this exclusivity is subject to the condition that the ship actually operates under a single recognised flag. When a ship improperly switches between several national flags in order to evade regulation, enforcement or inspection, it undermines the integrity of the international maritime framework. Stateless ships face serious legal and operational consequences. They do not have the right to fly a national flag and are therefore not protected by the diplomatic privileges or legal oversight of any flag state. This makes them vulnerable to enforcement action by any country according to international law. The provision is particularly relevant in combating modern challenges such as illegal, unreported and unregulated (IUU) fishing, smuggling and piracy, where perpetrators often use flag-hopping to avoid accountability. By treating ships with multiple or no valid flags as stateless, in essence, Article 92(2) serves to preserve the integrity of the maritime legal order by eliminating the legal loophole of multiple nationality claims and by strengthening the enforceability of international law against non-compliant ships.

(bareboat) registration. These terms and practices, including “parallel-in” and “parallel-out”[21] registration, are uniquely codified in the national law and are not universal features of ship registration under UNCLOS.

Investigating the drivers behind the continued expansion and use of open registers is essential for understanding the complex interplay of economic, regulatory, and geopolitical forces that shape global shipping practices. The decision to register a vessel under an open registry usually reflects shipowners' efforts to optimise operational flexibility, reduce operating costs, and address complex and diverse legal and financial issues and obligations. In countries with lower regulatory oversight, these drivers might include avoiding strict regulatory regimes, accessing lower labour and crewing costs by circumventing obligations, reduced tax liabilities (predominantly in the form of fees), and potentially reduced enforcement of international safety and environmental standards. Moreover, open registers in such countries often provide a degree of corporate anonymity that can obscure beneficial ownership and facilitate practices such as ship recycling in less-regulated jurisdictions or participation in high-risk trades.

From a public policy perspective, identifying these motivations is crucial for assessing how open registers used as flags of convenience impact key international and EU objectives, ranging from fair competition and sustainable development to maritime security and the protection of seafarers’ rights. Understanding these drivers also informs the broader discourse on flag State responsibility and the extent of erosion of the “genuine link” principle under international law. In this context, the study offers not only a descriptive account of flagging practices outside the EU but also an explanatory framework for why certain States and specific segments of the maritime industry continue to opt for open registers despite their well-documented externalities.

Section 1 of this Chapter is devoted to a brief comparison between open and national registers. while section 2 presents the global dynamics of demand and offer for open registers. A comprehensive statistical analysis is presented, covering global and sectoral trends. The business models of the various actors of the value chain are described in Section 3. Section 4 investigates in more depth the key features of open registers run by private businesses.

Section 5 focuses on examples of FOC States. It investigates the legal regimes in place, or lack thereof, in FOC States. It examines the question of the financial revenues generated by OR operated by private entities for the States concerned.

The analysis concludes with case studies on selected FOC (Section 6) and a summary of the main findings.

The focus of this study is global, outside the EU.

[21] Parallel-in and parallel-out registration are two forms of bareboat charter registration that allow a ship to be registered in two different registers for a limited period, but under different circumstances and with different legal effects.

The Annex provides the background to the registry comparisons through an in-depth literature review on the characteristics of open vs. national registers, highlighting ownership anonymity, cost structures, and regulatory leniency, directly informing the qualitative contrasts made in Chapter 2. Empirical data in the Annex relating to registry size, distribution by vessel type, and ownership domicile, substantiate findings relating to the dominance of open registers in specific market segments (e.g., maritime, cruise), versus their minimal footprint in others (e.g., fisheries).

1. Comparison between open and national registers

Open registers and national registers represent distinct models for managing a country's maritime fleet. They share the same aim: to attract shipping businesses and promote maritime interests. They must comply with international maritime regulations and standards to ensure safety and environmental protection. Both types of registers face competition from other jurisdictions in their efforts to attract shipping business. As depicted in Table 1, the key differences involve ownership, accountability, public service mandate, legal structure, financing, management and control, regulation and oversight, and social policy objectives.[22]

A flag of convenience is commonly but not necessarily operated by privately owned entities. The legal relationship that determines rights and obligations, as well as the State's monitoring and oversight capacity, is not publicly disclosed.

[22] Own elaboration of processed information from the following sources:

Llácer, F.J.M. (2003). Open registers: past, present and future. Marine Policy, 27(6), 513-523, ISSN 0308-597X, https://doi.org/10.1016/S0308-597X(03)00077-0

Sletmo, G., & Hoste, S. (1993). Shipping and the competitive advantage of nations: the role of international ship registers. Maritime Policy & Management, 20, 243-255. https://doi.org/10.1080/03088839300000016

Tolofari, S., Button, K., & Pitfield, D. (1986). Shipping Costs and the Controversy over Open Registry. Journal of Industrial Economics, 34, 409-427. https://doi.org/10.2307/2098626

Luo, M., Fan, L., & Li, K. (2013). Flag choice behaviour in the world merchant fleet. Transportmetrica A: Transport Science, 9, 429 - 450. . https://doi.org/10.1080/18128602.2011.594969

Kuznietsov, S. (2021). The "Genuine link" Concept: Is It Possible to Enhance the Strength?. Lex Portus. https://doi.org/10.26886/2524-101x.7.6.2021.3

Alcock, F. (2008). DeSombre, Elizabeth R. 2006. Flagging Standards: Globalization and Environmental, Safety and labour Regulations at Sea. Cambridge MA: MIT Press.. Global Environmental Politics, 8, 154-156. https://doi.org/10.1162/glep.2008.8.2.154

Haider, J. (2013). Towards a new era in ship registration. The International Journal of Logistics Management, 24, 87-100. https://doi.org/10.1108/IJLM-05-2013-0056

Ademuni-Odeke, A. (1997). The national and international legal regime of bareboat charter registrations. Ocean Development and International Law, 28, 329-367. https://doi.org/10.1108/IJLM-05-2013-0056

Some private entities act as Recognised Organizations (RO),[23] yet this is not always the case. FOC prioritise profit, while national registers often have a public service mandate, including promoting national interests and developing their maritime industry. FOC operate as private entities, often with opaque ownership structures, while national registers are public entities or statutory bodies. FOC are privately financed, while national registers are usually publicly funded. FOC have minimal regulation, while national registers are subject to extensive oversight.

In short, the main difference between national and open registers is the understanding of competition. Open registers used as FOC are, by nature, entities interested in addressing the needs of competition, while national ones are also interested in promoting state policies and goals. These are fundamentally two different and potentially conflicting objectives. Table 1 provides an overview of the key features of national and open registers.

Features	Open registers used as FOC	National registers
Ownership	Typically owned by private entities or a mix of private investors and state representatives. Ownership is often opaque and hidden due to protection clauses.	Wholly owned by the State. Ownership is exercised at the State level.
Public Accountability	Are not publicly accountable, and transparency is often limited. Operators focus on financial returns for private shareholders, with little public oversight.	Accountable to the public and government bodies. Regularly audited by public accounts committees and regulatory agencies.
Public Service Mandate	Do not have a public service mandate. Their primary goal is profit maximisation, focusing on serving international shipowners rather than public interests.	Often provide essential services to the fleet, even when these are not economically profitable. Public service is a key mandate.
Legal Structure	Operated by private entities, often in business-friendly jurisdictions, without direct state oversight. Legal ownership structures are often obscure.	The legal form varies- they can be public departments or statutory bodies, with varying degrees of autonomy and State control.
Financing	Financed by revenues from registration fees and private investment. The State does not provide financial support or cover losses.	Are financed through taxpayer funds, registry revenues, grants, or other forms of public financing.
Management and Control	Managed by private investors and an appointed management team, operate autonomously from State control.	Government appoints the management team, often including senior experts. State control varies depending on legal structure.

[23] A Recognized Organization (RO) is an organisation that has been assessed by a flag State and authorised to perform statutory certification and services on its behalf in accordance with the International Maritime Organization's (IMO) instruments, particularly as outlined in IMO Resolution A.739(18) and Resolution A.789(19). These include surveys and inspections related to safety, pollution prevention, and other international standards.

Features	Open registers used as FOC	National registers
Regulation and Oversight	Are minimally regulated and are typically not required to adhere to extensive public oversight unless stipulated by agreements like the Recognised Organisation Code.	Are subjectrto extensive regulation and oversight to ensure compliance with public policies, legal frameworks, and social objectives.
Social or Policy Objectives	Focus on the competitive needs of the shipping market, with little regard for social or policy objectives, such as national security or employment.	Often pursue broader policy objectives like promoting mariner employment, economic development, gender equality, and national security.
Profit and Loss - Surplus Distribution	Distribute profits to private shareholders. Losses are covered by private investors. State has no obligation to intervene.	Surpluses may be reinvested into the registry or subsidise other public services. Surplus distribution is focused on public service.
Autonomy	Operate with full autonomy, with little to no State intervention. Private investors and management control operations.	The degree of autonomy varies. Some operate independently, others are closely monitored and controlled by government boards.
Public Interest Focus	Focus on serving the international shipping market. Public interest concerns, like safety and environmental protection, are secondary unless regulated.	Focus on advancing the public interest, ensuring compliance to safety, environmental protection standards, and promoting local maritime industry stability.
Competitive Environment	Operate in a highly competitive global market, focusing on attracting international ships with flexible registration and low regulatory burdens.	May operate as natural monopolies, focusing on their own flag State rather than competing globally, with goals aligned with State policy.
Transparency	Are often less transparent, with minimal reporting requirements. Financial incentives and actions are frequently obscured from public view.	Are expected to maintain maximum transparency, with periodic reports to the government and the public on performance, finances, and compliance with regulations

Table 1: Comparison of key features of national versus open registers used as FOC

Table 2 below presents the open registers classified as FOC by ITF[24] and recorded in the Paris Memorandum of Understanding[25] (Paris MoU) on Port State

[24] In 2025 the ITF published list of open registers classified as FOC by the ITF's Fair Practices Committee (a joint committee of ITF seafarers' and dockers' unions), which runs the ITF campaign against FOC (Source: International Transport Workers Federation's (ITF) Fair Practices Committee (a joint committee of ITF seafarers' and dockers' unions).

[25] The Paris Memorandum of Understanding (Paris MoU) on Port State Control is the official agreement between 27 participating Maritime Authorities implementing a harmonised system of Port State Control. The Memorandum of Understanding consists of the main text and includes 12 annexes, in which the Maritime Authorities agree on:

- the relevant international conventions
- their inspection commitments
- The principles for the selection of ships for inspection
- the inspection procedures
- the exchange of information on inspections
- the structure of the Paris MoU organization, the Secretariat
- amendment procedures of the Memorandum itself

Control (PSC)[26], based on their performance[27] in either the White list, the Grey list or the Black list. The White List identifies high-performing flags with low detentions, resulting in fewer inspections for their vessels. The Grey List represents average compliance, encouraging improvement. At the same time, the Black List flags are associated with poor performers, characterised by high detention rates, which subject their ships to the most frequent and stringent inspections, including potential port bans. They are listed accordingly[28] - those without marks are not included in the Paris MoU Lists of 2023 (for the period July 2024 - June 2025).

Types of open registers	White list	Grey list	Black list	Not included in the Paris MoU Lists of 2023 (for the period July 2024- June 2025)[29]
FOC run by private entities	Barbados Liberia Marshall Islands	Cook Islands Lebanon St Kitts and Nevis St Vincent	Cameroon Moldova Togo Vanuatu	Bolivia Equatorial Guinea Gabon Guinea-Bissau Mauritius Mongolia Sao Tome and Príncipe
FOC run by public authorities	Antigua and Barbuda Bahamas Bermuda Cayman Islands Faroe Islands Gibraltar	Panama Sierra Leone	Belize Comoros Palau Tanzania (Zanzibar)	Curacao Eswatini Georgia Honduras Jamaica Myanmar San Marino Sri Lanka Tuvalu

Table 2: Breakdown of ITF-listed open registers used as FOC[24]

[26] Port State Control is an inspection regime for countries to inspect foreign-registered ships in port other than those of the flag state and take action against ships that are not in compliance.

[27] The “White, Grey and Black (WGB) list” presents the full spectrum, from quality flags to flags with a poor performance that are considered high or very high risk. It is based on the total number of inspections and detentions over a 3-year rolling period for flags with at least 30 inspections in the period.

[28] Source: Compilation from ITF https://www.itfseafarers.org/en/issues/flags-of-convenience/current-registries-listed-focs and Paris MOU (2024) https://parismou.org/Statistics%26Current-Lists/white-grey-and-black-list

[29] Guinea-Bissau and Tuvalu have only been classified as FOC by ITF in 2025. They have not been included in the other analyses in this report.

2. Global dynamics of demand and offer of open registers

2.1. Global statistics

The available data from 2022 from the Shipping Intelligence Network (SIN) and the analysis provided by UNCTAD[30] indicate that over 70% of global ship capacity in deadweight tons was registered under a foreign flag, with beneficial owners and registers domiciled in different countries (Table 3).

Rank	Flag of registration	Number of vessels	% total	Dead weight tons (in 000's)	% world	Average vessel size DWT	Growth in DWT 2022 to 2023
1	Liberia	4,821	4.6	378,346	16.6	78,479	12.7
2	Panama	8,174	7.8	365,096	16.1	44,666	4.2
3	Marshall Islands	4,180	4.0	299,170	13.2	71,572	3.2
4	Hong Kong	2,537	2.4	200,075	8.8	78,863	-3.7
5	Singapore	3,202	3.0	134,985	5.9	42,156	2.7
6	China	8,262	7.8	124,061	5.5	15,016	5.4
7	Malta	1,957	1.9	109,001	4.8	55,698	-5.0
8	Bahamas	1,274	1.2	72,674	3.2	57,044	-0.9
9	Greece	1,215	1.2	59,016	2.6	48,573	-4.3
10	Japan	5,229	5.0	41,726	1.8	7,980	4.2
Top 35		80,014	76.2	2,138,870	94.1	26,731	3.1
World Tot.		105,395	100.0	2,272,772	100.0	21,564	3.2

Table 3: Leading top-10 flags of registration by deadweight tons (DWT), 2022[31]

Significantly, this share was even higher in major ship-owning countries such as Germany, Greece, and Japan (Table 3). The share of foreign-flagged tonnage[32] reported by China, Denmark, Hong Kong, India, Indonesia, Kuwait, Norway, Singapore and the Islamic Republic of Iran was lower (Annex section 3.3).

[30] UNCTAD, Review of Maritime Transport, 2023, pp 32-5.

[31] Deadweight tonnage (DWT), often referred to simply as deadweight and abbreviated as DWT, D.W.T., d.w.t., or dwt, is a metric used to quantify the total weight a ship can carry. This includes the combined weight of cargo, fuel, fresh water, ballast water, provisions, passengers, and crew.

[32] In maritime use, tonnage denotes a ship's capacity, measured as gross tonnage (GT) for total volume, net tonnage (NT) for cargo/passenger space, and deadweight tonnage (DWT) as defined in the previous footnote. More explicit definitions are provided where these terms are introduced, hereinafter.

#	Country of declared owner	National Flag	Foreign Flag	Total	National Flag DWT	Foreign Flag DWT	Total DWT	Foreign flag % of total	Total as % of world dwt
1	Greece	598	4,332	4,936	51,976,486	341,036,573	393,033,425	86.8%	17.44%
2	China	5,997	2,791	8,839	121,809,591	179,066,943	301,997,355	59.3%	13.40%
3	Japan	950	3,069	4,023	37,438,045	200,224,252	237,673,376	84.2%	10.55%
4	Singapore	1,373	1,410	2,813	68,494,373	72,237,484	140,824,814	51.3%	6.25%
5	Hong Kong	842	979	1,842	72,339,321	44,542,059	117,287,467	38.0%	5.20%
6	Korea	816	869	1,696	17,588,035	79,517,595	97,144,236	81.9%	4.31%
7	Germany	184	1,971	2,156	6,834,385	70,143,305	76,980,906	91.1%	3.42%
8	Taiwan	151	892	1,054	6,279,703	52,197,018	58,549,256	89.2%	2.60%
9	UK	354	975	1,332	9,277,332	48,600,066	58,024,495	83.8%	2.57%
10	Norway	953	963	1,918	18,081,678	37,307,060	55,519,431	67.2%	2.46%
	Top-35	22,846	26,579	49,651	597,792,993	1,527,306,874	2,128,610,247	71.8%	94.5%
	Rest of World	3,281	2,648	6,940	34,906,961	61,981,471	124,968,662	49.6%	5.5%
	World	26,127	29,227	56,591	632,699,954	1,589,288,345	2,253,578,909	70.5%	100%

Table 4: Ownership (top-10) of the world fleet, by carrying capacity, national- and foreign-flagged fleet, deadweight tons, 2022[33]

The top 35 flag States accounted for 94.1 per cent of the world DWT, with most of this capacity listed under nineteen developing countries. The country of the flag is not necessarily connected to the nationality of the vessel's owner because a significant proportion of the world's tonnage is registered under open registers.

There has been a noticeable trend towards an increase in the share of the total global tonnage held by the top ten registers (Figure 1). The top three flag States, Panama, Liberia, and the Marshall Islands, have gradually gained market shares. As shown in Figure 1, there is a notable concentration of the global fleet's value in Panama (12.9%), followed by Liberia (11.8%) and the Marshall Islands (11.4%).[34] In the mid-1990s, Panama became the top flag of registration, with Liberia subsequently experiencing rapid growth. In 2022, Liberia saw a notable increase in DWT under its flag, surpassing Panama after approximately three decades. However, Panama continued to lead in terms of the number of vessels, commercial value, and gross tonnage. The growth in Panama's deadweight capacity (4.2%) was significantly lower than that of Liberia (12.7%). In this regard, the registry of PR China, ranked second in Table 4 as the country of declared owner, experienced the second-fastest growth rate (5.4%). In contrast, tonnage

[33] Table 4 refers to propelled seagoing merchant vessels of 100 GT and above, collected by SIN Clarksons as of 1 January 2023.

[34] Analysis of the evolution of the registered fleet in the period 2019-2023 can be found in Annex section 3.3.

registered in Greece, ranked first globally and in the EU,[35] declined by 4% over the previous years.

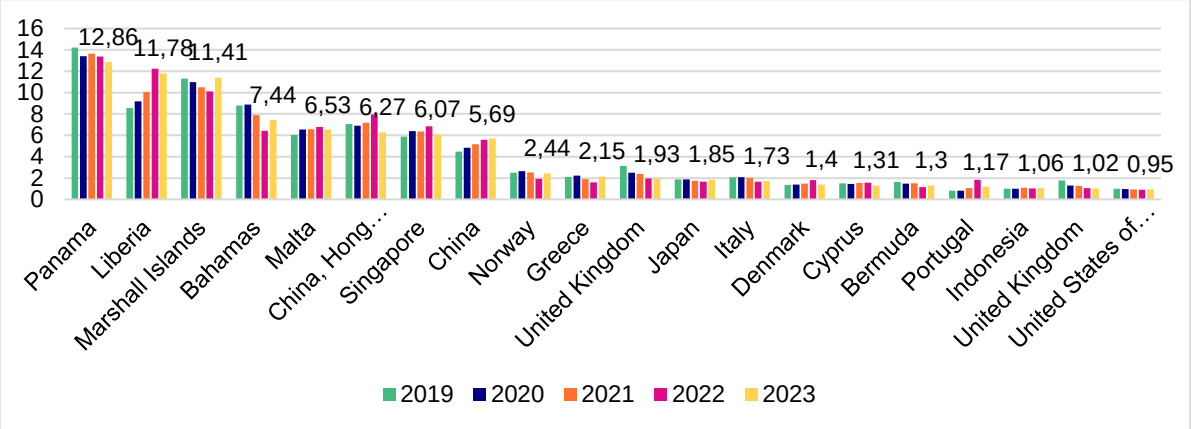


Figure 1: Top 20 Registers as per the value of ships

The leading 35 countries in ship ownership collectively account for a significant proportion of the world's shipping capacity (Figure 2 and Annex section 3.3). As of 1 January 2023, developed countries accounted for over half of the tonnage owned globally, with 19 developed nations among the leading 35 ship-owning countries. Owners in the Asian States, such as China and Singapore, are steadily gaining importance in the market and are among the top 10 ship-owning countries. Among the 35 ship-owning economies, 15 were in Asia, 14 in Europe and four in the Americas. Nigeria is the largest ship-owning country in Africa, while Brazil is the top country in South America.

As per 2023 reports, the value of the global fleet reached $1.26 trillion, with the top ten owners accounting for nearly two-thirds of the total. Greece leads this group, followed by China and Japan.[36]

[35] The Greek-owned fleet represents 59% of the EU-controlled fleet with more than 75% of the EU-controlled fleet being active in the bulk/tramp sector one-third of the Greek-controlled fleet flies an EU Member State flag. Source: Union of Greek Shipowners (https://ugs.gr/en/greek-shipping-and-economy/greek-shipping-and-economy-2022/characteristics-of-the-greek-owned-fleet/)

[36] Source: UNCTAD, Review of Maritime Transport 2023, p.27.

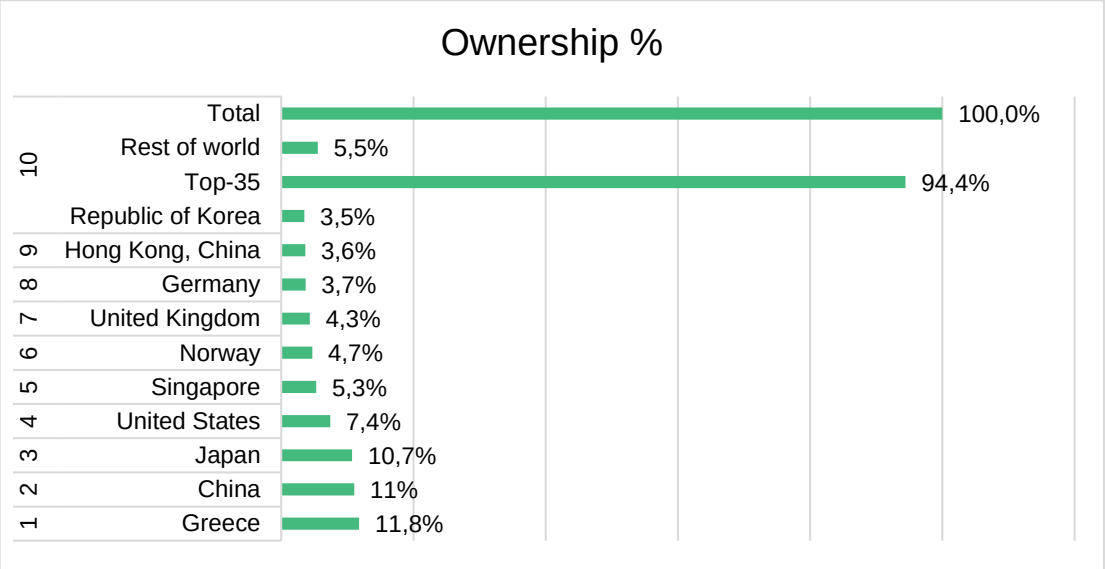


Figure 2: Ship-owning countries by % of value, 1 January 2023

The open registers enjoy a market share of 50%, while international registers have a market share close to 30% (Figure 3, and Annex section 3.3).[37] Figure 4 summarises the statistics and shows a rather stable yet high market share of open registers in the last five years.

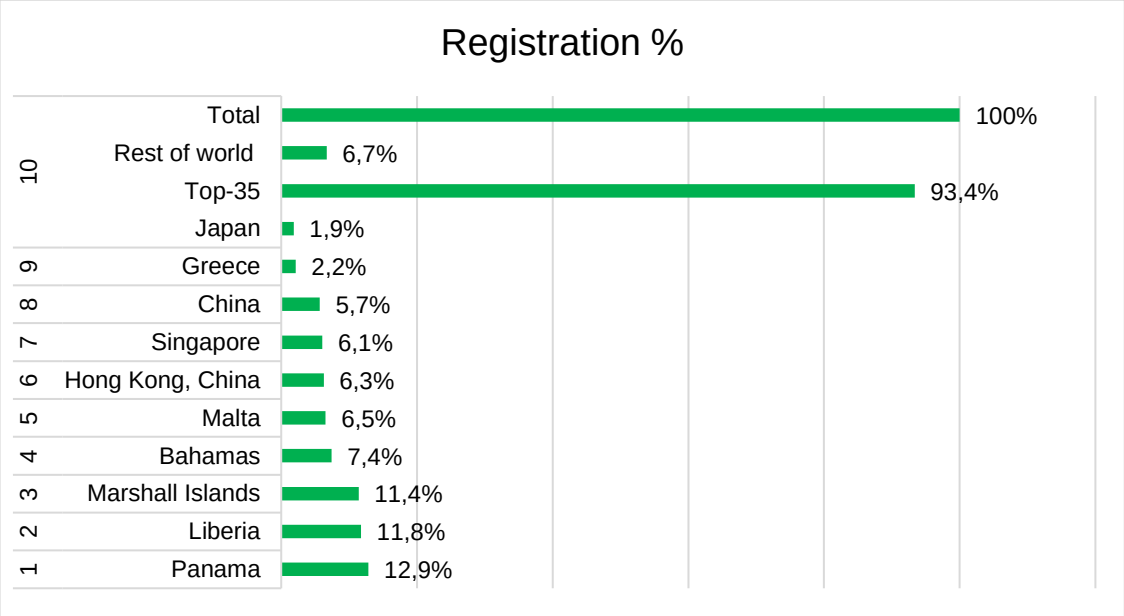


Figure 3: Ship-registration countries by % of value, 1 January 2023

By analysing the statistics of registration, the estimation of Herfindahl-Hirschman Index (HHI)[38] shows a strong tendency of domination by the top 10 registers and

[37] Source: UNCTAD, Review of Maritime Transport 2023, p.35 – see Figure 2.

[38] The Herfindahl-Hirschman Index (HHI) is a measure of market concentration, calculated as the sum of the squares of the market shares of all firms in the market, with higher values indicating greater concentration.

is slightly less competitive than the global economy (Annex section 3.4). Moreover, there is substantial inequality among the market shares of registers, as the top 5 registers control almost half of the global fleet.

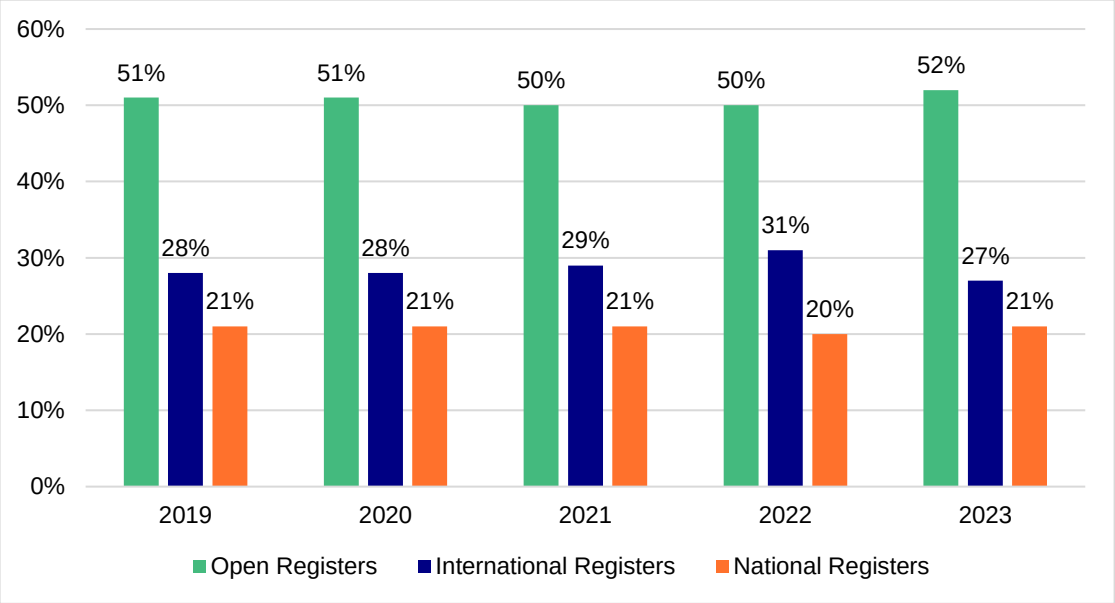


Figure 4: Breakdown of registers[39]

2.2. Sectoral statistics

2.2.1. Cargo Fleet

From 2011 to 2023, the total DWT has shown a consistent upward trend, reaching approximately 2 billion DWT by 2023[40] (Figure 5). The continuous increase in total fleet DWT across all continents indicates a steadily expanding total capacity of the global fleet.

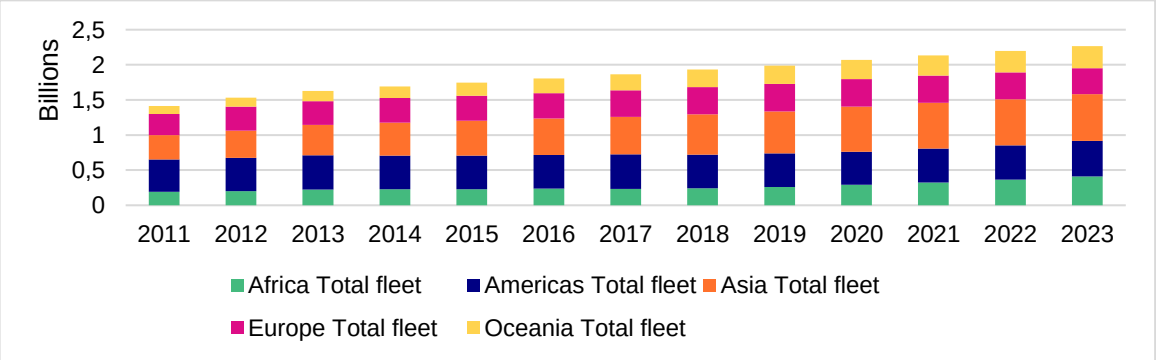


Figure 5: Total DWT, in billions, for Global Fleet: Breakdown Per Continent

[39] Source: UNCTAD.

[40] Source: Own elaboration, based on IHS Data.

Asia has the largest share of the global fleet's DWT, followed by Europe and the Americas (North and South). This trend highlights Asia's dominant position in the global maritime industry, with steady growth in other regions.

Moreover, the analysis per ship type suggests that the Asian fleet is increasing its global market share (Figure 5). In the period 2011 to 2023 (Figure 6), the total DWT of bulk carriers[41] has steadily increased, nearing 1 billion DWT by 2023. Asia consistently records the largest share of the global bulk carrier fleet's DWT. Europe and the Americas follow, contributing substantial but smaller portions.

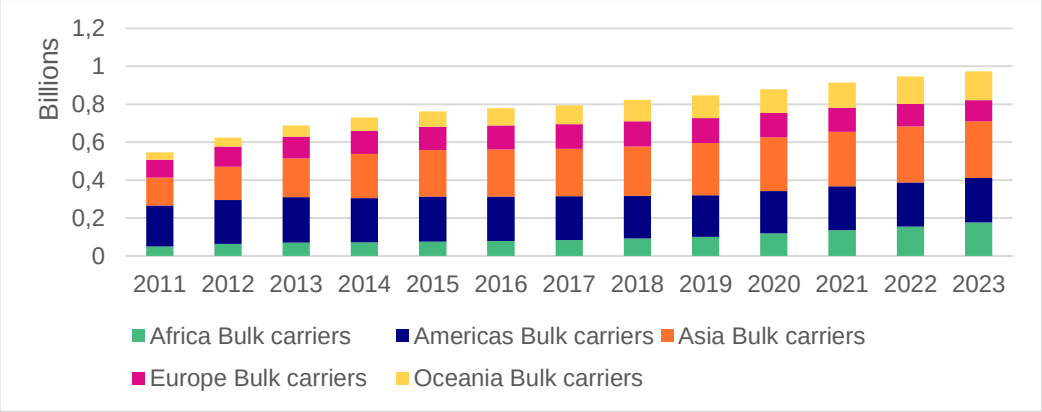


Figure 6: Total DWT, in billions, for Bulk Carriers Fleet: Breakdown Per Continent

The same results apply to the oil tanker[42] segment (Figure 7).[43] Over the same period, the total DWT of oil tankers has steadily increased, nearing 0.65 billion DWT by 2023. As seen, Asia is also the dominant continent in oil tankers.

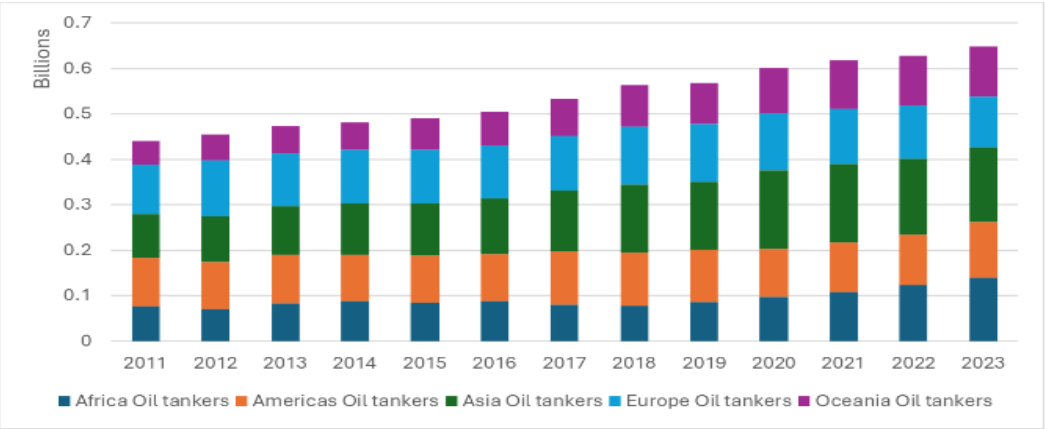


Figure 7: Total DWT, in billions, for Oil Tankers Fleet: Breakdown Per Continent

[41] Bulk carriers are cargo ships specifically designed to transport unpackaged bulk cargo such as grains, coal, ore, and cement in large cargo holds. They typically feature a single-deck design with multiple hatchways for loading and unloading.

[42] Branch, A. E. (2007). Elements of Shipping (8th ed.). Routledge: Oil tankers are vessels constructed to carry large volumes of liquid petroleum and its products. These ships are classified into categories such as VLCC (Very Large Crude Carriers) and ULCC (Ultra Large Crude Carriers) depending on their deadweight tonnage.

[43] Source: Own elaboration, based on IHS Data.

Concerning container ships[44] (Figure 8) the total DWT has steadily increased and has almost doubled, nearing 0.3 billion DWT by 2023. Asian and European fleets dominate the market, as the EU-Asia lines support global logistic chains.

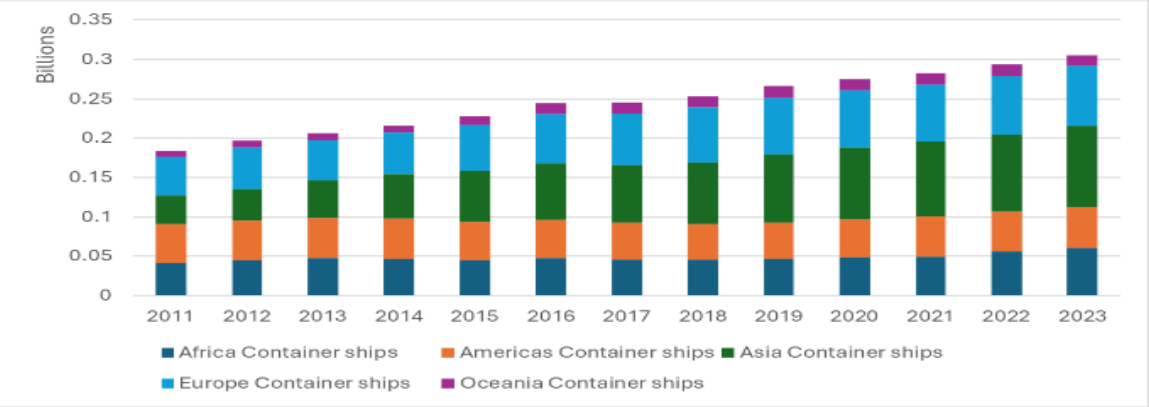


Figure 8: Total DWT, in billions, for Container Ships Fleet: Breakdown Per Continent

The capacity of general cargo ships remains[45] essentially stable over the years, in contrast to the growing capacity of other cargo segments (Figure 9). This development reflects logistics operators' preference for container ships, where cargo is unitised.[46]

[44] Container ships transport standardised cargo containers (usually TEU – Twenty Foot Equivalent Unit or FEU – Fourty Foot Equivalent Unit (i.e. equivalent to 2 TEU). Their design emphasises efficiency in cargo handling and speed, making them central to global intermodal freight transport. Although the carrying capacity of containerships is better illustrated in terms of Twenty-foot Equivalent Units (TEU), UNCTAD provides relevant information in DWT that do not accurately reflect the size of the fleet; therefore, the analysis uses DWT-based statistics to facilitate comparisons with other segments (IHS, Own elaboration).

[45] These ships are designed to carry a variety of cargoes, often in packaged form. Unlike container ships, their holds are typically not containerised, making them versatile but less efficient in handling.

[46] Unitised cargo refers to goods that are grouped or packaged together into a single unit for easier handling, storage, and transport. Examples of unitised cargo include items secured predominately in containers, as well as in pallets, crates, or bundles. This method of cargo handling improves efficiency, reduces loading and unloading time, minimises damage, and facilitates standardization in logistics operations.

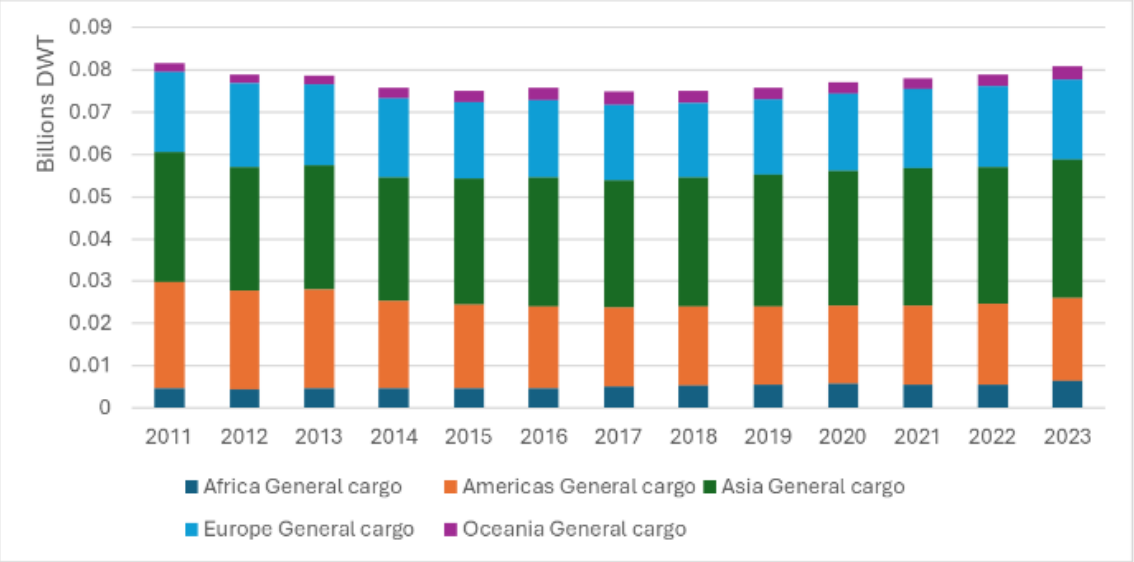


Figure 9: Total DWT, in billions, for General Cargo Ships Fleet: Breakdown Per Continent

2.2.2. Cruise Fleet

The global cruise fleet (Figure 10) has steadily increased, both in terms of berths offered, number of ships and gross tonnage (GT)[47].

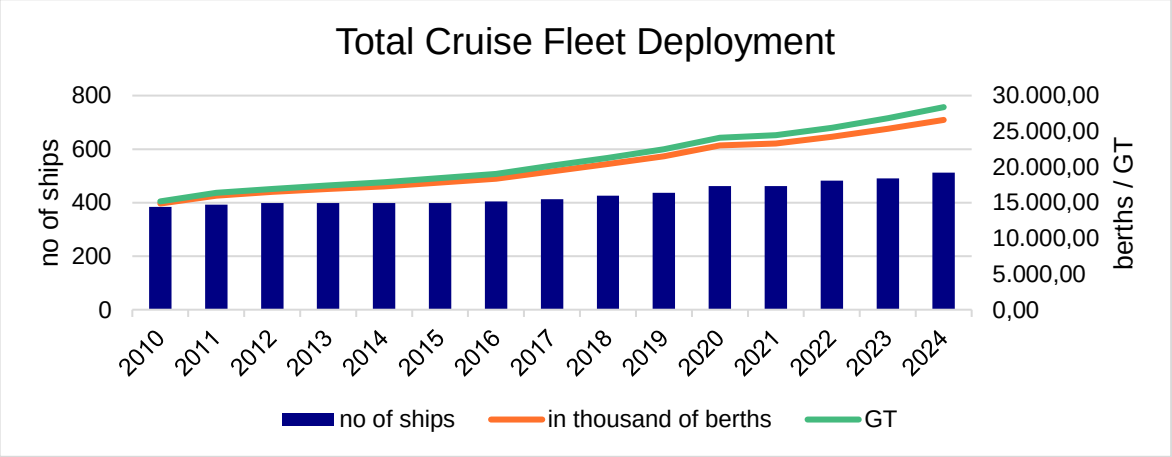


Figure 10: Total Cruise Fleet Deployment in thousands of berths

The top-10 operators (Figure 11) control 86.91% of the GT of the total fleet. The U.S. based corporations Carnival and Royal Caribbean control over 55% of the fleet in GT terms.

[47] Gross tonnage (GT or gt) is a measure of a ship's overall internal volume and is determined by dividing by 100 the contents, in cubic feet, of the vessel's enclosed spaces, International Convention on Tonnage Measurement of Ships 1969.

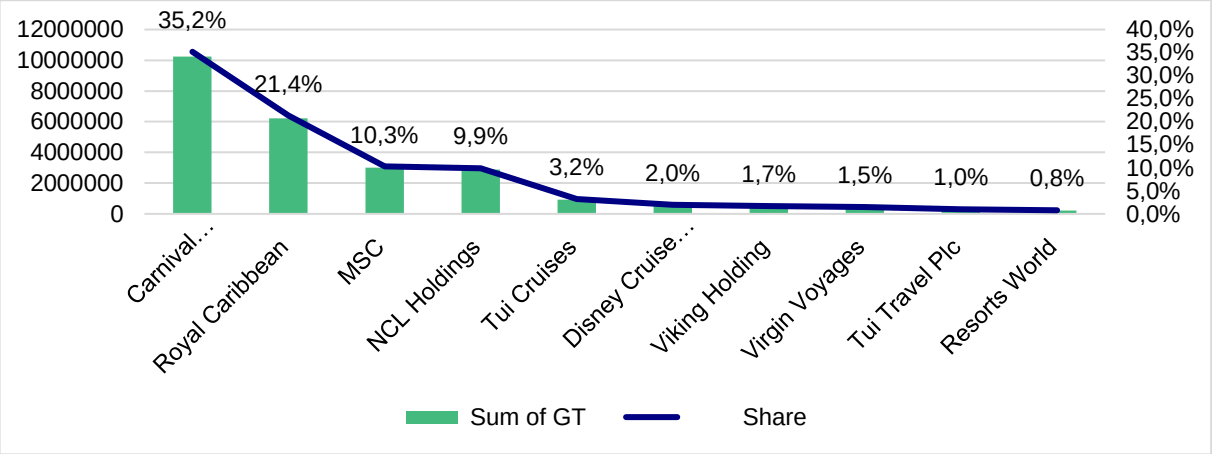


Figure 11: Top-10 Cruise Fleet Operators

In terms of GT, most cruise ships (59.85%) are registered in the Bahamas (Figure 12). The registers of the Bahamas (60%), Malta (17%) and Panama (20%) dominate the market, and generally, the top 10 registers enjoy a market share of 95.75% (further statistics are provided in Annex section 4.2).

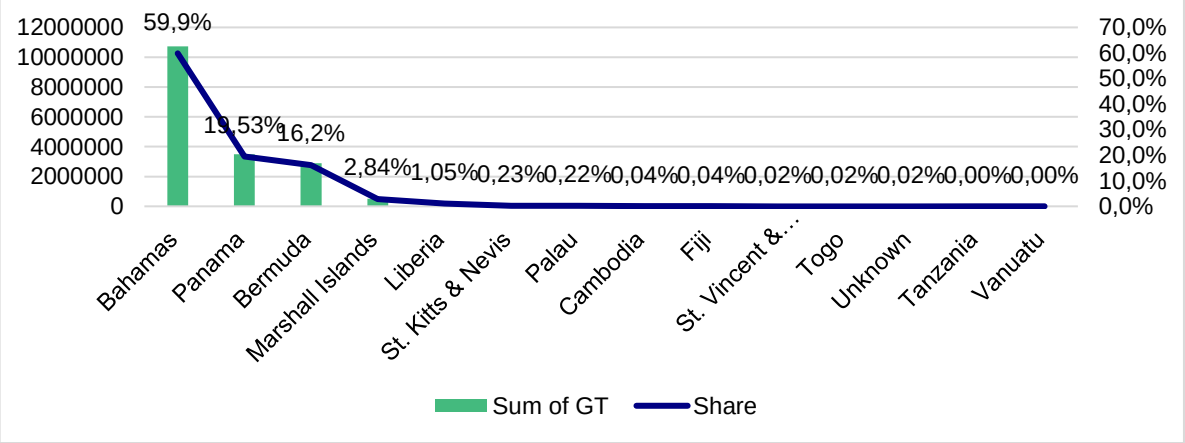


Figure 12: Breakdown of the cruise fleet per open registry flag

2.2.3. Fishing Fleet

Analysing the fishing fleet is not an easy task, as on a global level, there is no uniform definition of the ships engaged in fishing activities. The fleet is very diverse, the data are fragmented, and reporting is inconsistent. Factors like illegal, unreported and unregulated (IUU)[48] fishing, cross-border mobility, and insufficient monitoring technologies further complicate accurate data collection and standardisation. The concept of Distant Water Fishing (DWF)[49] and the ships engaged in DWF are more closely related to the objective of this analysis due to

[48] Illegal, unreported, and unregulated (IUU) fishing refers to fishing activities that violate national or international laws and regulations, threatening marine ecosystems and sustainable fisheries.

[49] Distant Water Fishing (DWF) is defined as the 'practice of commercial fishing vessels operating outside the territorial waters of their countries of origin, usually extending their range of action to faraway places.

their central role in global seafood supply chains. Moreover, DWF vessels often operate on the high seas, where the flag State's capacity to exercise effective control is limited. Additionally, the high operational costs associated with such activities may incentivise vessel owners to choose a flag registry that offers favourable economic or regulatory conditions, which in turn complicates efforts to trace, monitor, and standardise fleet data. (Annex sections 5.1 and 5.2 provide statistics on the fish farming and fish catching fleet).

The analysis focuses on fish-catching, fish factories, and support vessels, as provided in the IHS Sea-web database. These vessels form the operational core of the DWF fleet, and are often flagged to States with varying levels of oversight. Their activities directly reflect how flag States fulfil their legal obligations under international law, particularly in terms of monitoring and enforcement. Because these vessels are frequently linked to IUU fishing and transhipment practices - issues more prevalent under open registers, they offer valuable insight into governance quality.[50] [51] Additionally, their detailed documentation in sources like IHS Sea-web ensures reliable, comparable data across registry types. Globally, there has been a significant decrease in the number of vessels from 2010 to 2020 (Figure 13).[52] The world fleet consisted of 2.66 million vessels of various sizes, from very small, i.e. <6m, to extremely large, i.e. >75m of Length Overall (LOA) in 2020. This number decreased to 1.17 million in 2020.

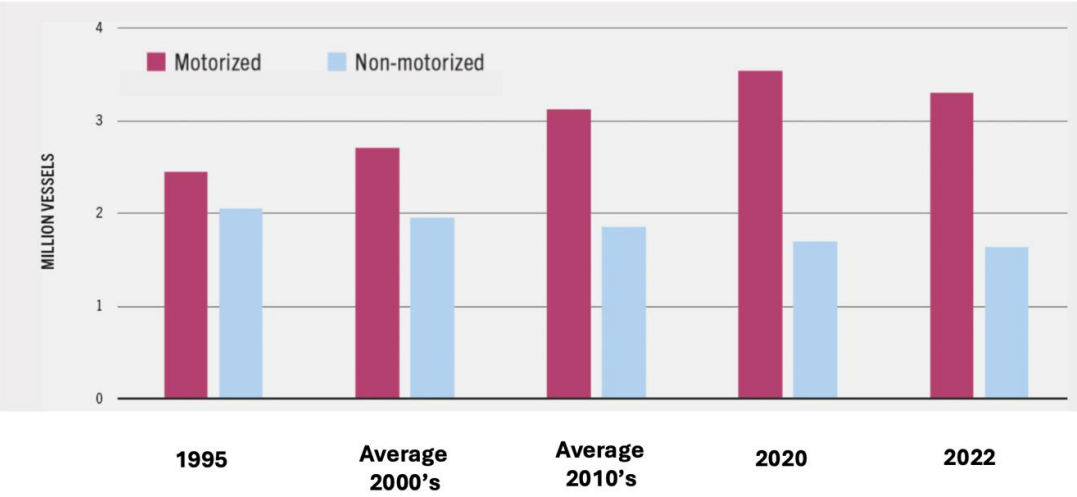


Figure 13: Global Fishing Fleet – Motorised and non-motorised 1955 – 2022[53]

By contrast, the world's fishing fleet capacity has remained practically stable over the period 2010-2020. While it marginally increased from 15.4 million GT in 2010 to 16.6 million GT in 2015, it has been declining since then, reaching the 2010 levels in 2020. This represents a decline of 7.19% annually in terms of the

[50] Tickler, D., Meeuwig, J. J., Palomares, M. L., Pauly, D., & Zeller, D. (2018). Far from home: Distance patterns of global fishing fleets. Science Advances, 4(8), eaar3279.

[51] Miller, D. D., & Sumaila, U. R. (2014). Flag use behavior and IUU activity within the international fishing fleet. Marine Policy, 44, 204–211.

[52] Source: FOA Fisheries and Aquatic Statistics Yearbook 2022.

[53] Source: OECD.

number of ships, while a negligible increase of 0.01% in the GT is calculated. This suggests that the average size in terms of GT of the individual fishing vessels has increased from 5.8GT to 13.2GT (see also Figure 15).[54]

This increase in fishing capacity is correlated with the increase in fishing efforts. There has been exponential growth in the number of hours fishing vessels spent in the oceans over the period 2012-2020 (Figure 14). The year with the highest number of fishing hours was 2019, when fishing vessels spent over 52 million hours at sea, approximately 6.5 times as many as in 2012. In 2013, the percentage of recorded fishing hours increased by 161% over the previous year. Since then, total fishing hours have increased steadily, by 27%, 15%, 23%, 14%, 9%, and 7% from 2013 to 2019, respectively. The only reduction in total fishing hours was observed between 2019 and 2020, by a mere 5%, which may be attributed to the COVID-19 pandemic.

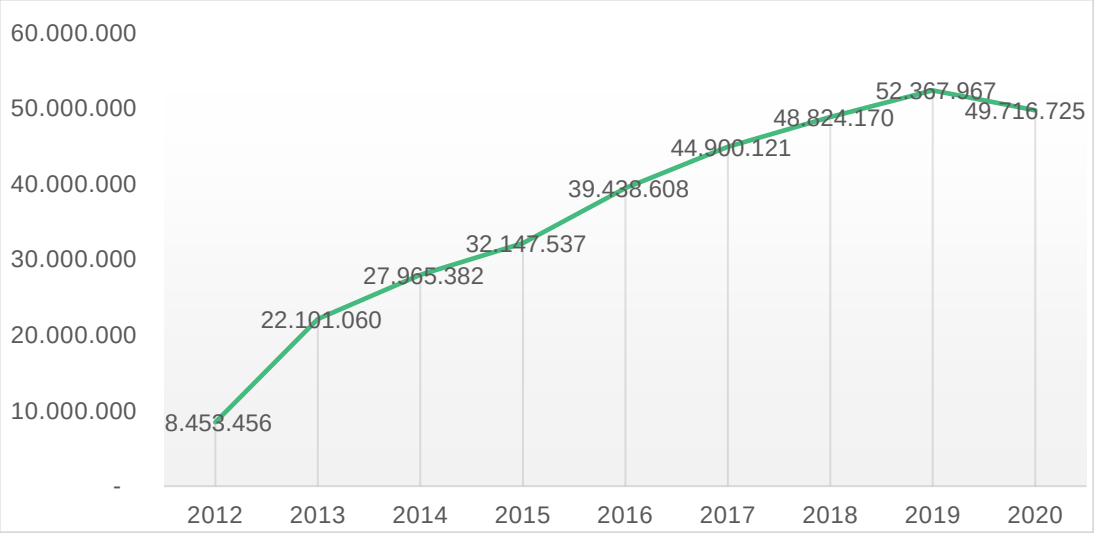


Figure 14: Total Fishing Hours by Year (2012-2020) [55]

There are no credible data or statistics on the breakdown of the fishing fleet per registry. The FAO and OECD[56] provide aggregated information that clearly shows a decline in the number and size of fishing vessels registered under OECD countries (Figure 14). Other sources (Figure 15) provide more detailed statistics; however, the analysis covers only a select number of years. The relative importance of fishing vessels, and therefore the interest in fisheries of major global players, such as China, Taiwan, South Korea, and Japan, is depicted and can be related to demographic data. Vanuatu is the only registry with a

[54] Source: OECD Fishing Fleet data.

[55] Source: Global Fishing Watch.

[56] The Food and Agriculture Organization of the United Nations (FAO), established in 1945, leads international efforts to defeat hunger and improve nutrition and food security; the Organisation for Economic Co-operation and Development (OECD), founded in 1961, is an intergovernmental body that promotes policies to improve the economic and social well-being of people worldwide.

disproportional number of registered fishing vessels compared to its demographics.

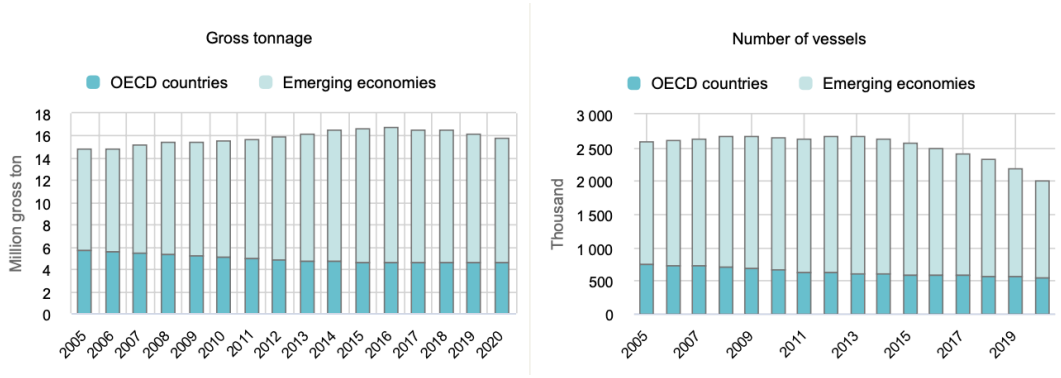


Figure 15: World Fishing Fleet [57]

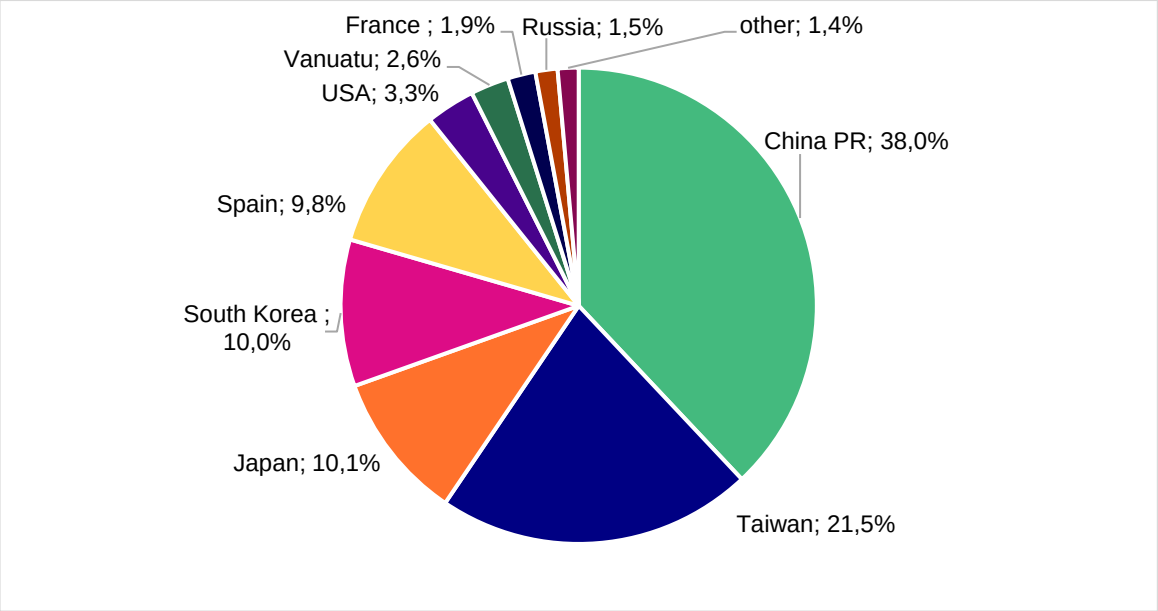


Figure 16: Proportion of Fishing Effort by top-10 DWF fleets 2016-7 [58]

2.2.4. End-of-life Vessels (Recycling Sector)

By providing a necessary service for disposing of ageing ships while contributing to the recycling economy, the global ship demolition market is a vital component of the maritime industry. However, the shipbreaking industry is complex and challenging to analyse. It is characterised by high fragmentation, where many small and medium-sized yards are in operation.

The degree of regulatory enforcement and transparency varies considerably between countries, and therefore, the availability of data. Shipowners and demolition yards may also deliberately obfuscate or misreport data, motivated by

[57] Source: OECD Review of Fisheries 2022.

[58] Source: Stimson, 2019.

environmental and legal concerns. Furthermore, the tracing of the final disposal of ships is complicated due to the frequent change of flag shortly before recycling in countries with less rigorous regulations, such as some open registers. The absence of a unified global database or standardised system for monitoring ship scrapping activities results in inconsistencies and gaps in the available information. Data from SIN Clarksons and the Non-Governmental Organisation (NGO)[59] Shipbreaking Platform[60] have been utilised and further elaborated.

Ship recycling remains dominated by South Asia, largely due to the continued use of beaching practices and the high price offered for the scrap steel.[61] According to data compiled by the Shipbreaking Platform across all ship types for the period 2017–2023 (Table 5 and Table 6), over 90% of the global tonnage dismantled occurs in eight countries. Among them, Bangladesh accounts for approximately 30% of the total number of dismantled ships and 43% of the gross tonnage (GT). In comparison, India is responsible for 30% of the dismantled ships and 27% of the GT, and Pakistan for 11% of the ships and 15% of the GT.

These three countries host the major dismantling hubs of Chattogram, Alang-Sosiya, and Gadani, which collectively handle over 70% of all dismantled commercial vessels worldwide (see Figure 19). Turkey plays a more modest role in terms of volume, although its market share has been gradually increasing to 14% (by number) and 8% (by GT).

	2017	2018	2019	2020	2021	2022	2023	Total
Bangladesh	200	187	226	144	254	122	170	1306
China	98	22	21	5	4			150
Denmark	14	12	4	7	16	10	9	72
India	244	249	199	203	211	128	138	1,372
Indonesia	6	7	4	5	7	9	12	50
Korea (S)	3	1	4	11	11	11	4	45
Pakistan	106	81	34	99	119	43	15	498
Turkey	135	111	107	95	77	48	44	617
U.S.	11	14	9	8	9	7	9	67
Unknown	4	9	4	4	14	2	3	40
Top-10	821	693	612	581	722	380	404	4,217
Grand Total	844	741	664	632	766	441	441	4,533

Table 5: Number of Ships Recycled

[59] Non-governmental organisations are non-profit, voluntary groups formed independently of government influence, often working to address social, technological, humanitarian, environmental, or advocacy issues.

[60] The NGO Shipbreaking Platform is a global coalition of organisations working to reverse the environmental harm and human rights abuses caused by current shipbreaking practices and to ensure the safe and environmentally sound dismantling of end-of-life ships worldwide https://shipbreakingplatform.org

[61] Addressed in detail in Annex section 6

	2017	2018	2019	2020	2021	2022	2023	Total
Bangladesh	6.765.673	7.847.856	7.612.142	6.496.774	8.036.554	2.927.006	3.232.593	43.046.909
China	2.296.190	424.032	269.358	216.010	46.708	204.024	-	3.456.322
Denmark	23.357	22.728	8.943	20.947	66.800	37.299	146.998	327.072
India	6.233.399	4.672.857	3.658.868	4.515.973	3.147.778	2.453.956	2.511.400	27.194.231
Indonesia	19.878	39.236	9.868	17.545	35.863	31.706	103.818	257.914
Pakistan	4.068.375	4.216.307	283.999	2.256.705	2.972.585	1.297.965	680.802	15.778.861
Turkey	1.432.843	911.098	1.169.163	1.625.813	1.369.076	766.048	470.966	7.745.007
U.S.	90.621	188.349	120.335	95.323	156.699	183.240	138.596	973.163
Unknown	165.064	12.166	11.420	9.175	25.653	3.534	27.895	254.907
top-10	21.095.400	18.334.629	13.144.096	15.254.265	15.857.716	7.904.778	7.313.068	99.034.386
Grand Total	21.198.199	18.506.504	13.268.746	15.405.590	16.030.536	8.041.702	7.566.968	100.148.679

Table 6: GT of Ships Recycled

When compiling all last recorded transactions available in SIN Clarksons,[62] which focus on bulk carriers, containers and tankers (Figure 17 and Figure 18), the distribution of the market share in terms of number of ships and gross tonnage (GT) demolished of all reported ship types presents a similar pattern. Bangladesh is the dominant country (45.5%), followed by India (25.4%), Pakistan (13.7%) and Turkey (3.9%). These four countries account for 88.5% of the total market in terms of GT.[63]

Since most bulk carriers are demolished in Bangladesh, the figures for both the number of ships and GT appear reasonable. Bulk carriers, as well as tankers, generally have higher gross tonnage (GT) compared to other ship types. Consequently, markets that receive a larger share of these vessel categories will exhibit disproportionately higher GT values in the statistics, even if the number of ships dismantled is comparable to or lower than in other markets.. Further detail is provided in Annex section 6.

[62] SIN Clarksons provide data on reported transactions; these transactions include all types of ships, yet due to the size of the ships, the sample reflects mainly bulk carriers, all sorts of tankships, general cargo and container vessels

[63] Source: Processed data from SIN Clarksons.

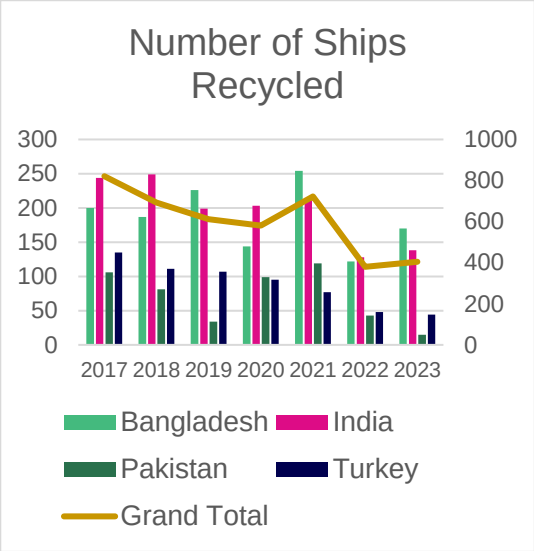


Figure 17: Number of Ships Recycled

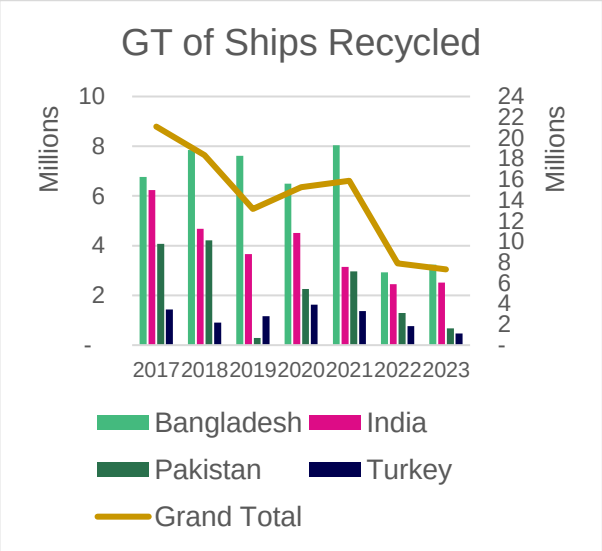


Figure 18: GT of Ships Recycled

Overall, with approximately 500 commercial vessels concluding their operational lifespan annually, ship dismantling is reported mainly under South Asia (see Figure 19), where the beaching[64] of ships is still possible. In practice, reporting often identifies locations in broad terms - such as India, Pakistan, or Bangladesh - as individual entities. However, when the precise location is unknown or deliberately withheld, transactions are typically grouped under the generic terms *Indian Subcontinent* or *South Asia*. Although these cases are relatively few, they remain statistically visible and reflect both the limitations of reporting practices and how information is sometimes intentionally obscured.

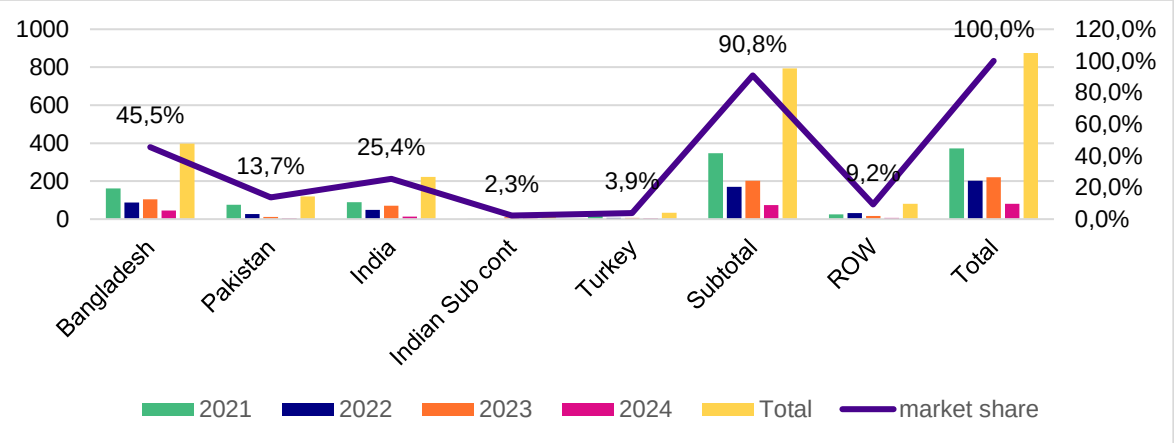


Figure 19: Breakdown of activity per demolition location

[64] Beaching, as a shipbreaking method, generally refers to dismantling ships at grounded condition in intertidal zones. In this method, a ship is emptied of cargo and ballast, then driven to coast on a high magnitude tide, and stranded on the beach. The workers access the vessel at low tide and start scrapping for recycling materials. Source: Zhu, H., Du, Z. (2022). Beaching. In: Cui, W., Fu, S., Hu, Z. (eds) Encyclopedia of Ocean Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-10-6946-8_161

FOC play a critical role in the last voyage to the ship dismantling facilities. Data compiled by the Shipbreaking Platform (Table 7 and Table 8) show that the registers of Comoros, Palau, Panama, and Saint Kitts and Nevis attract notably high market shares for end-of-life vessels.

Demolition Register	Register before Demolition								
	Bahamas	China	Liberia	Marshall Islands	Panama	Singapore	Unknown	(blank)	Grand Total
Comoros	66.174	36.561	217.567	87.404	228.958	118.433	25.669	17.931	798.697
Gabon		100.446	9.949		68.464	14.857	3.491	56.604	253.811
Liberia								677.646	677.646
Mongolia		61.309			2.829			2.243	66.381
Palau		60.359			30.740		2.208	70.260	163.567
Panama								1.666.777	1.666.777
Sierra Leone		159.045			8.645		15.010	51.242	233.942
St Kitts & Nevis	66.174	236.191	186.967	96.011	340.046	94.502	5.191	63.282	1.088.364
Unknown	5.084		19.377			57.200		32.764	114.425
Grand Total	**137.432**	**653.911**	**433.860**	**183.415**	**679.682**	**284.992**	**51.569**	**2.638.749**	**5.063.610**

Table 7: Register at demolition vs register before demolition (2017-2023) – GT[65]

Demolition Register	Register before Demolition								
	Bahamas	China	Liberia	Marshall Islands	Panama	Singapore	Unknown	(blank)	Grand Total
Comoros	1	1	7	1	10	5	1	2	28
Gabon		7	1		3	1	1	2	15
Liberia								11	11
Mongolia		3			1			1	5
Palau		3			2		1	5	11
Panama								59	59
Sierra Leone		10			1		1	11	23
St Kitts & Nevis	1	11	4	1	16	3	2	5	43
Unknown	1		1			2		7	11
Grand Total	**3**	**35**	**13**	**2**	**33**	**11**	**6**	**103**	**206**

Table 8: Register at demolition vs register before demolition (2017-2023) – Number of Ships

A substantial part of the breakdown (approximately 11% of the total) remains unknown; i.e., Information on the register flag before and after the last voyage transaction is missing, which likely suggests OR was used as FOC.

[65] Source: Shipbreaking Platform

Table 7 and Table 8[66] above demonstrate clear patterns of re-flagging before demolition. For instance, in terms of gross tonnage, Comoros accounts for almost 800,000 GT (≈16% of the sample shown), largely through vessels transferred from China, Panama, and Liberia. Similarly, Saint Kitts & Nevis represents more than 1 million GT, reflecting its role as a popular end-of-life registry for ships previously flagged in Singapore, Panama, and Liberia.

When considering the number of ships rather than tonnage, the same trend emerges: Comoros (28 ships) and Saint Kitts & Nevis (43 ships) together account for roughly one-third of the vessels in this dataset. Other registers, such as Gabon, Mongolia, and Sierra Leone, ap pear less frequently but still illustrate the practice of last-voyage re-flagging into secondary or open registers.

Taken together, these results confirm that a relatively small group of open registers dominates the market for end-of-life ships, both in terms of tonnage and vessel count.

The phenomenon is similar for EU-flagged vessels. During the period 2013-2023, a total of 324 EU-flagged vessels were re-flagged less than 1 year before being recycled, often to countries with open registers, such as Palau, St Kitts and Nevis, or the Union of the Comoros, and were primarily dismantled in South Asia. From 2016 until 2023, the ships flying an EU flag that changed flag less than 1 year before being recycled consistently represented a higher tonnage (in Light Displacement Tonnage (LDT)[67] than the ships that still had an EU flag at the time of recycling. Figure 20 below shows EU-flagged ships that changed flag in the last year before being recycled - new flag and dismantling locations (2013-2022) is illustrative.

[66] Blank cells in the tables reflect categories not present in the original Shipbreaking Platform dataset and therefore could not be reconstructed. Minor discrepancies may also occur due to rounding or incomplete reporting, but the tables are internally consistent and the deviations are negligible for the overall analysis.

[67] LDT (Light Displacement Tonnage) is the weight of a ship without cargo, fuel, lubricants, ballast, provisions, crew, or passengers—essentially the “bare ship” weight, including the hull, machinery, and permanent fittings. It is expressed in metric tons and is especially important in ship demolition, where vessels are valued based on their LDT.

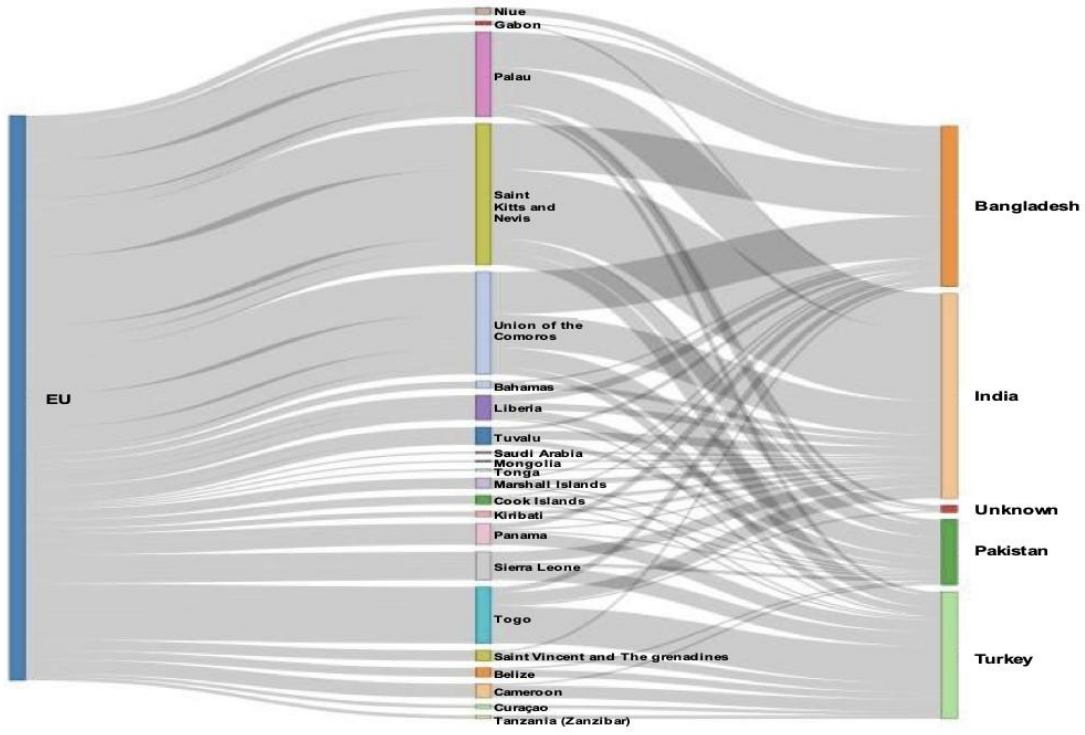


Figure 20: EU-flagged ships that changed flag in the last year before being recycled: new flag and dismantling locations [68] [69]

A more detailed presentation of the above data is provided in the Annex section 6.1. The aggregated tables in the Annex provide only the data available in the Shipbreaking Platform dataset. Entries not present in the source data cannot be reconstructed and are therefore not shown here (Table 7 and Table 8 above).

[68] Source: Support study based on EMSA data, extracted from COMMISSION STAFF WORKING DOCUMENT Evaluation of Regulation (EU) No 1257/ 2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC

[69] In this Sankey the leftmost column indicates initial ship registrations under EU flags. The central column illustrates the flag changes these vessels undergo. The rightmost column denotes the final destinations for being scrapped. The flows connecting these columns are represented by streams, with the width of each band corresponding to the volume of ships that have undergone the specific transition.

2.2.5. Safety and Environmental Issues

Global figures for safety and environmental deficiencies are not consistently collected or publicly available. The International Maritime Organisation (IMO)[70] plays a role in the Electronic Quality Shipping Information System (Equasis) by holding an observer status at its Supervisory Committee and serving on its Editorial Board. Equasis compiles PSC data, which the IMO then utilises. However, the PSC data provided through Equasis originates from various regional Memoranda of Understanding (MOU) on Port State Control, meaning their coverage is limited to the specific regions those MOU encompass.[71]

For that reason, the performance of the open-registered vessels on safety and environmental protection is analysed using data from EMSA THETIS,[72] [73] the EU database on inspections conducted in ports of Paris MOU member states.[74] PSC in the EU focuses on compliance with all major international conventions on maritime safety and environmental protection, notably the International Convention for the Prevention of Pollution from Ships (MARPOL)[75], which aims to prevent pollution of the marine environment by ships from operational or accidental causes, along with Resolution MEPC.94(46) - Condition Assessment Scheme (Adopted on 27 April 2001 by the Marine Environment Protection Committee)[76], and the International Convention for the Safety of Life at Sea

[70] International Maritime Organization (IMO): A specialised agency of the United Nations responsible for regulating shipping. Established in 1948 and headquartered in London, the IMO develops and maintains a comprehensive framework of global standards for the safety, security, and environmental performance of international shipping.

[71] Regional Memoranda of Understanding (MOUs) on Port State Control are cooperative agreements among maritime administrations to harmonise ship inspections and combat substandard shipping. Major MOUs include the Paris MOU (Europe/Canada), Tokyo MOU (Asia-Pacific), Viña del Mar Agreement (Latin America), Mediterranean MOU, Caribbean MOU, Indian Ocean MOU, Abuja MOU (West & Central Africa), Black Sea MOU, and Riyadh MOU (Gulf States), all supporting IMO and ILO conventions.

[72] THETIS is used for reporting and managing inspections, particularly regarding PSC.

[73] Data for this study were provided by EMSA on a confidential basis, with use strictly limited to the scope of this research.

[74] The Paris MOU is made up of 22 EU Member States with seaports as well as Norway Iceland, Montenegro, Canada and the United Kingdom. Russian Federation membership of the Paris MOU was suspended following the Russian invasion of Ukraine.

[75] International Maritime Organisation (197/1978). International Convention for the Prevention of Pollution from Ships (MARPOL). London, United Kingdom: IMO.

Also, International Convention on the Control of Harmful Anti-fouling Systems on Ships (Antifouling), International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), International Convention on Civil Liability for Bunker Oil Pollution Damage (Bunker), Nairobi International Convention on the Removal of Wrecks (Nairobi WRC), Polar Code (2014) sets mandatory safety and environmental standards for ships in polar waters;

[76] Resolution MEPC.94(46) adopted the Condition Assessment Scheme (CAS), a mandatory scheme for single-hull oil tankers aimed at verifying their structural condition to ensure continued safe operation and reduce pollution risk, particularly as they aged, before their eventual phase-out.

(SOLAS)[77], which sets minimum safety standards for the construction, equipment, and operation of merchant ships to ensure the safety of life at sea.

The analysis shows that the environmental-related deficiencies detected in EU ports and collected by EMSA constitute the smallest share of the total deficiencies (10%)[78] (Figure 21 and details in Annex section 7). Eligible vessels are selected for inspection based on their ship risk profile, with each ship having its own unique profile. The profile comprises several parameters, including the vessel type, its age, flag, and previous performance in PSC inspections conducted by the Paris MOU. This means that vessels with poor PSC performance are targeted more frequently for inspection, while those with good performance in inspections are inspected less often. As a result, the risk-based selection employed in PSC inspections might introduce a bias in the deficiency percentages attributed to specific countries; the reader must consider this factor when interpreting the findings.

Of the 5,883 environmental-related deficiencies,[79] 3,164 are found on Panama-flagged vessels (5.4%). The safety-related deficiencies are the leading type of incidents, representing 63.7% of the total deficiencies. Among the 37,430 safety-related deficiencies, 19,900 are recorded on Panama-flagged vessels (i.e. 33.9%). Notably, apart from Panama, other OR with significant deficiencies in all three categories are Togo, Comoros, Palau, Moldova and Vanuatu.

[77] International Maritime Organisation (1974). International Convention for the Safety of Life at Sea (SOLAS), as amended. London, United Kingdom: IMO.

Also, International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code). International Ship and Port Facility Security Code (ISPS Code) International Convention on Load Lines (LL Convention), Convention on the International Regulations for Preventing Collisions at Sea (COLREG), International Code of Safety for High-Speed Craft (HSC Code), International Convention on Tonnage Measurement of Ships (Tonnage Convention).

[78] Source: Processed data by EMSA THETIS 2019-2023.

[79] 'Safety' related deficiencies cover: ISM, ISPS, SOLAS, LL, COLREG, HSC, Tonnage, while the 'Environmental protection' related deficiencies cover: MARPOL, Res. MEPC.94(46), Antifouling, BWM, Bunker, Nairobi WRC, Polar Code.

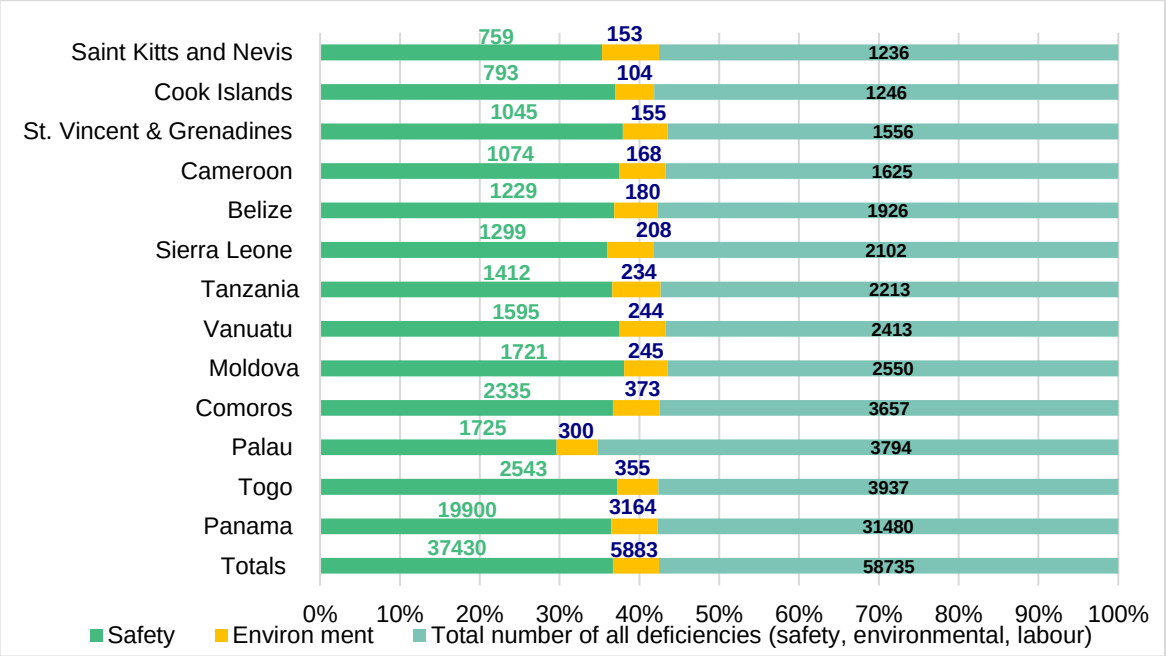


Figure 21: Breakdown of deficiencies of OR-ships inspected in EU ports per 'safety' and 'environmental protection' related deficiencies against the total number of deficiencies 2019-2023

All figures presented here refer exclusively to EU port calls, not global calls. Figure 22 below illustrates safety and environment-related deficiencies by flag State. The percentages shown in parentheses represent the ratio of deficiencies to total EU port calls for each flag (e.g., 912 deficiencies out of 19,054 port calls for the Cook Islands, rounded to 5%). Panama-flagged vessels perform relatively well, with 23,064 deficiencies in 413,197 EU port calls (6%). By contrast, Cameroon-flagged vessels recorded 1,242 deficiencies in 1,551 EU port calls (80%), indicating that the majority of these vessels were detained for safety and environmental reasons.

Other high percentages were observed for Comoros (22%, 2,708 deficiencies in 12,215 EU port calls), Palau (20%, 2,025 in 10,306), Tanzania (19%, 1,646 in 8,827), and Togo (18%, 2,898 in 16,530). Sierra Leone and Vanuatu each reached 12% (1,507 deficiencies in 12,107 calls and 1,839 in 15,810 calls, respectively), followed by Moldova with 11% (1,966 deficiencies in 17,444 calls). Belize-flagged vessels recorded 1,409 deficiencies in 24,898 EU port calls (6%), the same percentage as Panama.

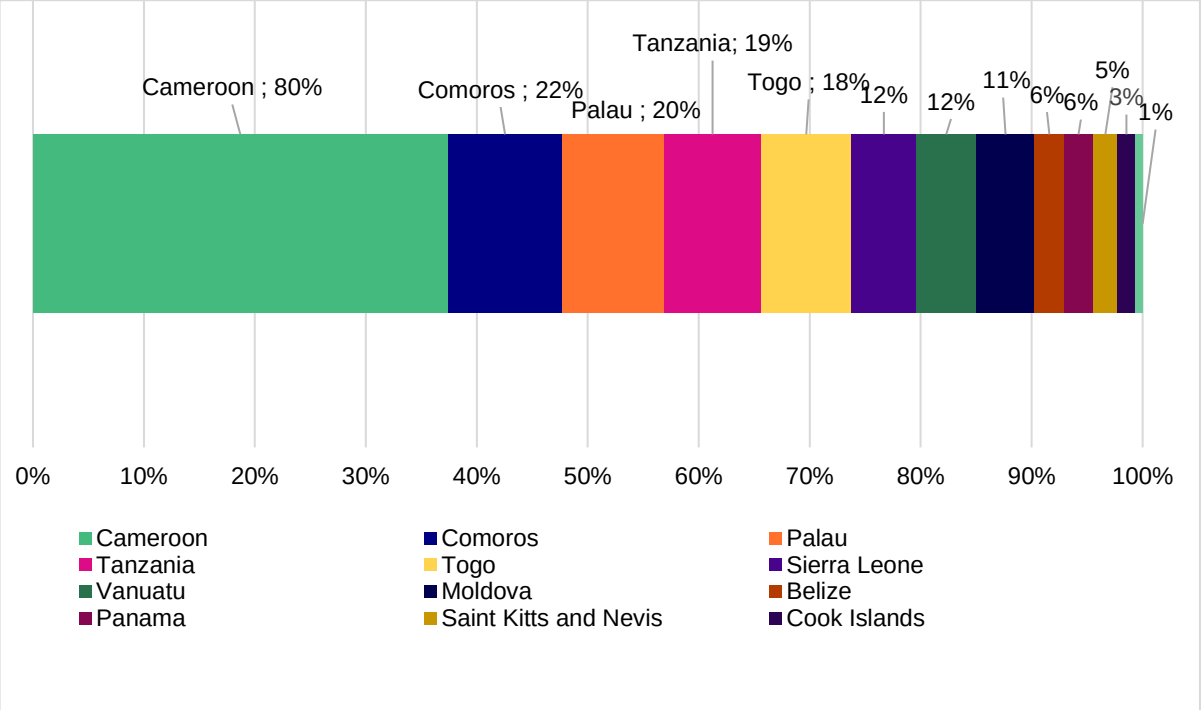


Figure 22: Percentage of safety and environmental deficiencies per total number of ports of call, per flag 2019-2023

However, Panama had by far the highest absolute numbers due to the much larger volume of calls. Saint Kitts and Nevis vessels scored 912 deficiencies in 19,054 EU port calls (5%), and the Cook Islands 897 in 26,753 calls (5%). The lowest rate was observed for Saint Vincent and the Grenadines, with 1,200 deficiencies in 82,452 EU port calls (1%).

2.2.6. Social and Labour Issues

The global supply of seafarers based on the latest global statistics was estimated at 1,892,720 seafarers, of which 857,540 are officers (seafarers at management level) and 1,035,180 are ratings (seafarers at operational level) (BIMCO/ICS 2021) ,[80] excluding non-mariners (such as hotel and catering personnel employed on cruise ships) and seafarers who work solely on domestic vessels (e.g., harbour, estuarial or riverine craft), for which STCW[81] Certificates of Competence (CoC) are not required.

[80] BIMCO and International Chamber of Shipping/ ICS (2021). Seafarer Workforce Report. The global supply and demand for seafarers in 2021. UK: Witherby Publishing Group Ltd. ISBN: 978-1-85609-993-6.

[81] The International Convention on Standards of Training, Certification and Watchkeeping (STCW) for Seafarers sets minimum qualification standards for masters, officers and watch personnel on seagoing merchant ships and large yachts. STCW was adopted in 1978 by the IMO conference in London and entered into force in 1984. STCW Certificates of Competence (CoC) confirm that a seafarer has met the required standards of training, skills, and experience for a specific rank or duty on board a vessel.

The top-5 largest seafarer supply countries are the Philippines, the Russian Federation, Indonesia, China, and India (Figure 23). These five countries represent 44% of the global seafarer workforce supply. The Philippines has been the dominant global provider of the seafarer workforce working on international vessels across recent decades.[82] India, Indonesia, and China are consistently among the top seafarer suppliers, with the latter showing significant growth after 2000. Both have increased their numbers due to the expansion of their maritime training institutions and large populations. Russia and Ukraine are stable suppliers, particularly for officer-level roles. More than half of the Russian seafarers appear to be employed by the state-owned Russian fleet, while over 75% of Ukrainian seafarers are employed by foreign shipping companies, on vessels flying different flags (Wu and Morris 2006)[83]. Vietnam, Bangladesh, and Myanmar emerged as new providers over the last few years, while traditional maritime nations have shown significant and constant decreases over the previous decades.

The ten most featured future seafarer supply countries, as indicated by shipping companies (BIMCO/ICS 2021), include: Ukraine, Myanmar, the Philippines, India, China, Romania, Greece, Indonesia, Croatia and the UK. Figure 23 indicates the seafarers' supply from the Top-10 labour supplying states 2010 – 2021. The reason for the potential shift to alternative seafarer supply countries includes the level of English language competency, availability of seafarers, visa or other travel restrictions, change of vessel's trading areas and others (detailed in Annex section 8.1).

[82] BIMCO/ISF (2000). The BIMCO/ISF 2000 manpower update: the world-wide demand for and supply of seafarers: main report. Baltic and International Maritime Council, International Shipping Federation, University of Warwick Institute for Employment Research.

[83] Wu, B. and Morris, J.. (2006). 'A life on the ocean wave': The 'post-socialist' careers of Chinese, Russian and Eastern European seafarers. International Journal of Human Resource Management. https://doi.org/10.1080/09585190500366201

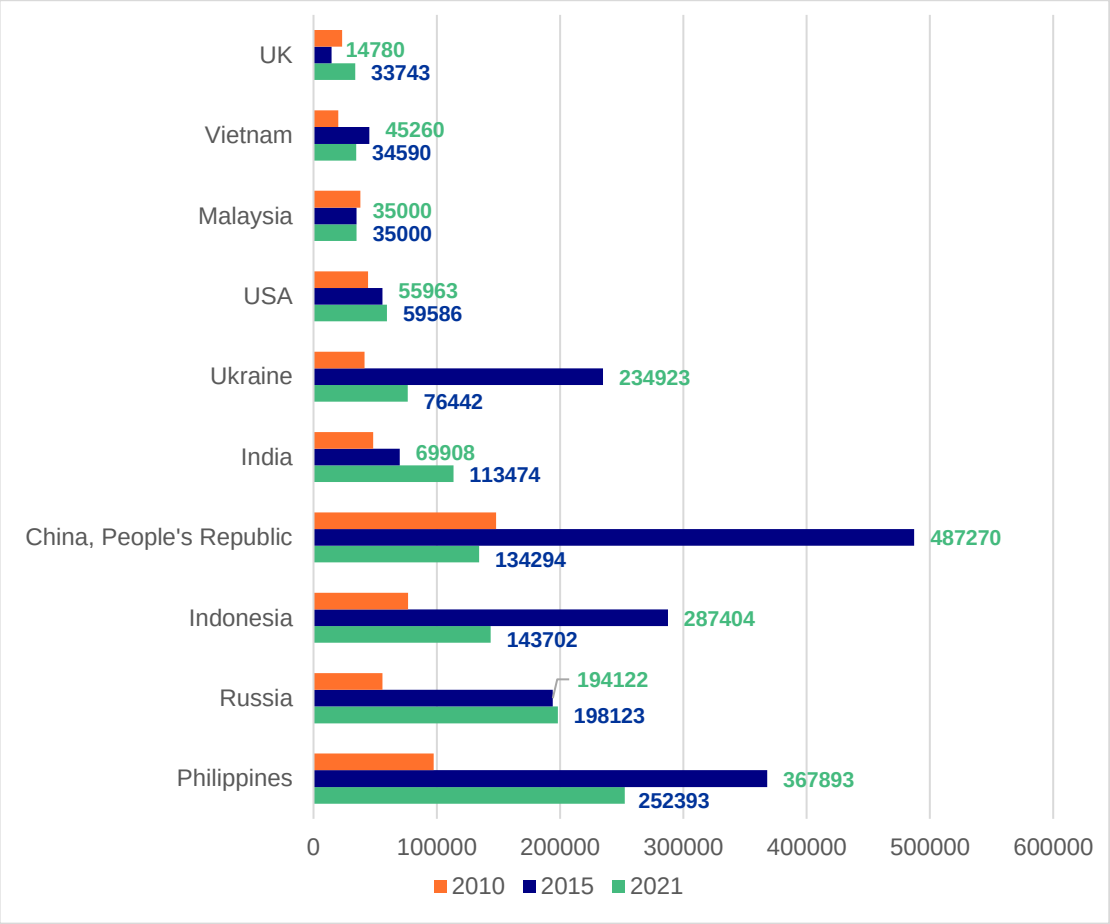


Figure 23: Seafarers' supply from top-10 labour supplying states 2010-2021[84]

Seafarers face numerous challenges, including occupational hazards, health risks, and psychological and social issues, affecting their safety and well-being (details in Annex section 8.4). They encounter physical dangers from machinery, hazardous materials, and accidents exacerbated by harsh working conditions. Health concerns arise from long work hours, fatigue, substandard nutrition, and exposure to diseases, while mental health is strained by isolation, high stress, and long periods away from home. Communication barriers and cultural differences in multicultural crews add to the difficulty. Additionally, seafarers face external threats like piracy and armed robbery attacks, and issues related to social dumping persist, especially for those on open registered vessels.

The following examines the various issues in more detail and their links to FOC. As for social and labour-related deficiencies, there are no global records. For this, various sources are used to present the different issues and their links to FOC.

Notably, the available sources of labour supply statistics do not provide information on which nationalities are employed on specific FOC.

[84] Source: Processed selected data from: BIMCO/ICS (2021); BIMCO/ICS (2015); BIMCO/ISF (2010).

i) PSC deficiencies related to labour

Labour-related EMSA THETIS[85] PSC deficiencies are broken down into the most significant issues. On the one hand, they include the Seafarers' Training, Certification, and Watchkeeping (STCW) standards, which primarily cover certification and verification, crew competence, watchkeeping arrangements, manning levels, training requirements, language proficiency, medical fitness, and record-keeping. On the other hand, they cover the Maritime Labour Convention provisions (MLC)[86] which concern 16 items: crew documentation and training, hours of work/rest, crew working and living conditions, seafarer employment agreements (SEA)[87], crew wages and payment, social security and protection, health, safety and welfare standards, repatriation, and onboard complaint procedures.

When relating labour-related deficiencies to the OR-flagged vessels as depicted in Figure 24, Panama scores highest in total labour-related deficiencies (with 8,416 out of 15,341, i.e. 54.9%), followed by Togo and Comoros with 1,039 (i.e. 6.8%) and 949 (i.e. 6.2%) labour-related deficiencies, respectively. Detailed statistics are available in Annex section 8.2.

[85] Data for this study were provided by EMSA on a confidential basis, with use strictly limited to the scope of this research.

[86] The Maritime Labour Convention (MLC and MLC, 2006) is an international treaty adopted by the International Labour Organization in 2006 that sets minimum standards for the working and living conditions of seafarers worldwide.

[87] A Seafarer Employment Agreement (SEA) is a legally binding contract between an individual seafarer and a shipowner (or their representative) that sets out the terms and conditions of employment for work on a ship. SEAs are a requirement under the Maritime Labour Convention (MLC).

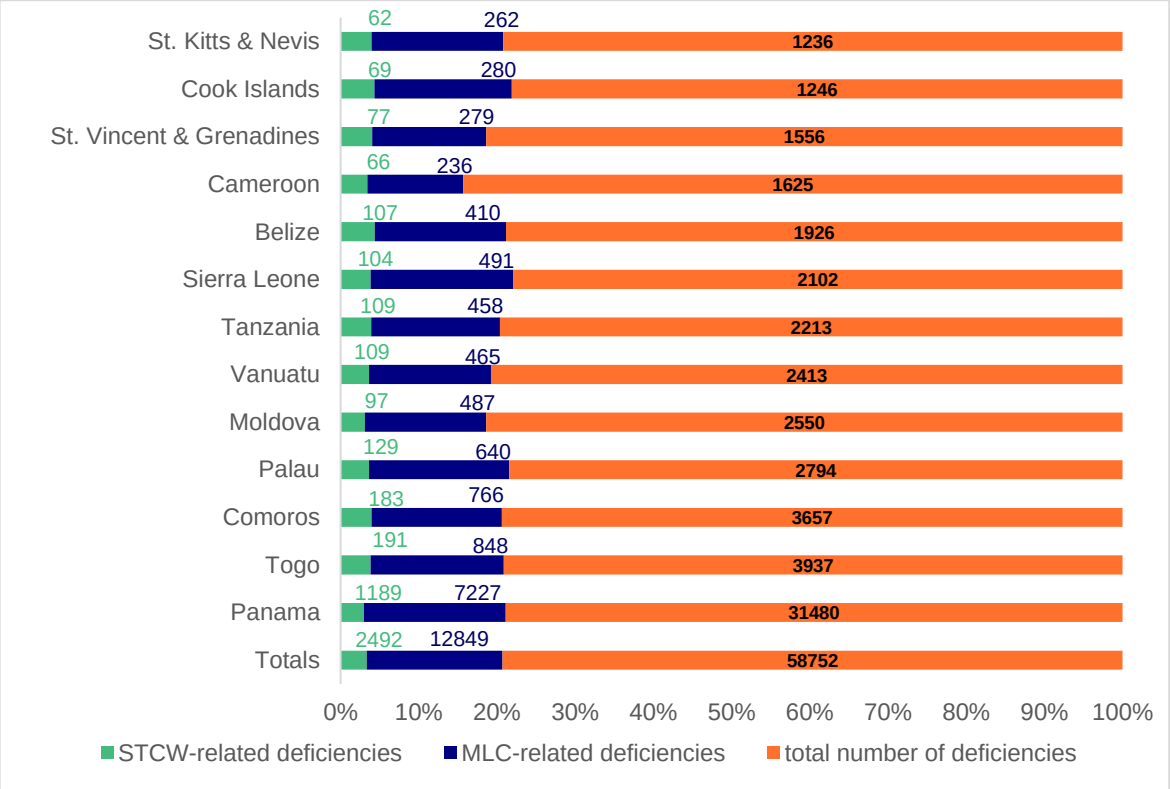


Figure 24: Breakdown of labour-related deficiencies per open register- FOC (2019-2023) [88]

Comparing the labour-related performance to the number of EU port calls (Figure 25) reveals that while Panama has the highest absolute number of labour-related deficiencies, it scores rather low compared to the number of calls at EU ports (8,416 labour deficiencies in 413,197 calls at EU ports, i.e. 2%). Cameroon has the poorest record with 236 labour-related deficiencies in 1,551 EU port calls (19.5%), Figure 25. Moreover, it is notable that Cameroon has the highest record of 1,625 total deficiencies (safety, environmental and labour-related) to 1,551 EU port calls, i.e. 105%, meaning that vessels flying the flag of Cameroon score at least one deficiency in every call at EU ports.

[88] Source: EMSA THETIS.

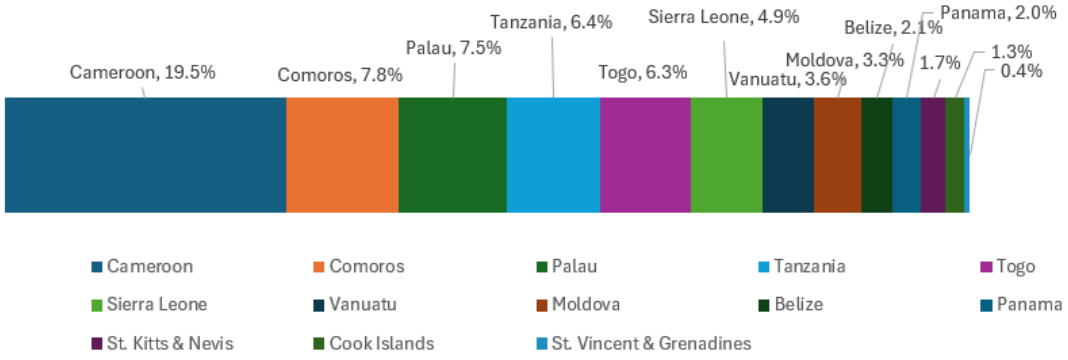


Figure 25: Percentage of labour-related deficiencies on OR-flagged vessels per total EU port calls (2019-2023) [89]

ii) Abandonment of seafarers

Abandonment of seafarers in a third country by shipowners and flag States, in particular its duration, can be used as a measure of the non-compliance with the responsibilities of flag States and shipowners as defined in the Maritime Labour Convention. In the event of abandonment, the flag State plays a pivotal role in ensuring the protection, assistance, and repatriation of seafarers who are abandoned. Its primary responsibility is to ensure that abandoned seafarers receive immediate care and that the shipowner is held accountable for their obligations.

In addition, in the event of abandonment, the flag State must ensure the repatriation of the seafarer to their home country or place of residence. The flag State is often required to coordinate with consular services, shipowners, and maritime authorities, i.e., port authorities and the authorities of the seafarers' country of origin, to facilitate repatriation. If the shipowner fails to provide repatriation, the flag State is obligated to step in and arrange it, often at the shipowner's expense. If the shipowner fails to meet their obligations, the flag State may be required to provide financial support for the seafarer's immediate needs (such as food, medical care, and shelter) until repatriation can be arranged. The flag State plays a pivotal role in ensuring the protection, assistance, and repatriation of seafarers who are abandoned; its primary responsibility is to ensure that abandoned seafarers are provided with immediate care and that the shipowner is held accountable for their obligations. The flag State must investigate the circumstances of abandonment and ensure the shipowner is held accountable for any violations, including whether the abandonment was due to negligence or failure on the part of the shipowner to fulfil their contractual or legal obligations.

[89] Source: EMSA, THETIS.

Sampson (2022)[90] has explored the resolution of all abandonment cases (all flag States involved) for the period 06.01.2004 to 06.06.2019. Her analysis of seafarer abandonment data was used to assess the effectiveness of the Maritime Labour Convention (MLC) in resolving abandonment cases quickly and successfully, particularly considering the limitations of the MLC at the time.[91] The analysis indicated that more than two-thirds (68.9%) of cases of abandonment, which took place before the adoption of the Maritime Labour Convention by the flag States concerned, took two years or more to resolve. The cases which occurred after the ratification of the MLC by the flag State concerned fell to 11.5% of cases. Before the MLC, only 21.4% of cases were resolved within a year of abandonment, and afterwards, this rose to 69.2%. However, Sampson (2022) notes that despite the improvement after MLC, almost a third of cases remained unresolved for more than a year.

In 2023, ITF inspectors recovered a total of US$ 57,161,779 in unpaid wages for seafarers worldwide (ITF, 2023).[92] That year also marked the highest level of abandoned vessels (129) and abandoned seafarers (1,983) ever recorded by the ITF.[93] ITF analysis showed that in 2023, four FOC accounted for more than 100 cases of crew abandonment in the previous two years globally, with millions of dollars in unpaid wages by the flags' shipowners that the ITF then had to recover on seafarers' behalf. In three years, the flags of the Cook Islands, Palau, Sierra Leone, and Togo were found to be responsible for 33 cases of crew abandonment, affecting more than 100 seafarers and leaving many without pay, food, water, or a means of repatriation. The ITF had to recover over $5,500,000 USD in unpaid wages from the flags' shipowners on behalf of the seafarers.

The data for 2024 (available up to May 30, 2024) shows ten more seafarer abandonments in EU ports. In nine of these cases, non-EU-flagged vessels have been involved (Annex section 8.3).

[90] Sampson, H. (2022). 'Beyond the State': The limits of international regulation and the example of abandoned seafarers. *Marine Policy*, 140, 105046. https://doi.org/10.1016/j.marpol.2022.105046

[91] in its original form, the MLC did not contain strong, enforceable provisions for dealing with cases of seafarer abandonment. Amendments adopted in 2014 (and effective from 2017) introduced mandatory financial security requirements to ensure abandoned crews could receive repatriation and basic support. Sampson's study covers abandonment cases reported before these amendments came into force, thereby providing insight into the MLC's effectiveness under its earlier, more limited framework.

[92] ITF (2023). ITF Press Release, ITF targets four worst flags in bid to scrap unsafe shipping from Mediterranean Sea. March 16. https://www.itfseafarers.org/en/news/itf-targets-four-worst-flags-bid-scrap-unsafe-shipping-mediterranean-sea

[93] 2023 was the worst year ever seen for seafarer abandonment – and ITF inspectors recovered nearly US$60 million in unpaid wages - https://www.itfglobal.org/en/news/fighting-rights-itf-inspectors-stand-strong-seafarers-in-record-breaking-year-shame

The global mapping of stranding of seafarers based on the International Labour Organization (ILO)[94] and IMO seafarer abandonment databases[95] (Annex section 8.3) indicates that 852 Ukrainian seafarers have been abandoned in 122 cases, 832 Indian seafarers have been involved in 109 cases, 628 Filipino seafarers have been involved in 56 cases, and 435 Russian seafarers have been abandoned in 77 cases. Other nationalities of seafarers have been involved in fewer cases in the period 2019-2023.

Figure 26 depicts the cases of seafarer abandonment globally by the top-10 FOC-flagged vessels and the average days of abandonment. Figure 27 indicates 404 (79.5%) cases involved FOC-flagged vessels. Additional detail is included in Annex section 8.3.

The following FOC-flagged vessels have been involved in the largest numbers of abandonments: Panama with 108 cases (21.3%), Palau with 31 (6.1%), Tanzania 30 (5.9%), Togo 25 (4.9%), St. Kitts and Nevis 24 (4.7%), Liberia 23 (4.5%), Comoros 22 (4.3%), Cameroon 21 (4.1%), Belize 16 (3.1%) and Marshall Islands 13 cases (2.6%).

In terms of duration, most abandonment cases remained unresolved six months after the reporting date. In most incidents, the duration of abandonment is over a year, and on average, the incident remains unresolved for 942 days, i.e. 2.58 years. Panama has the highest number of seafarer abandonment cases (108, with an average of 989 days of unresolved cases), and Liberia has the highest average number of days with unresolved cases (1,420 days, with 23 cases of abandonment). Other OR involved in long-standing instances of unresolved seafarer abandonment are Algeria, Antigua and Barbuda, Bahamas, Belize, Bolivia, Cameroon, Cook Islands, Mauritius, Mongolia, Samoa, Tanzania, Togo, Vanuatu, and Zambia.

[94] The International Labour Organization (ILO) is a specialised agency of the United Nations, the ILO is devoted to promoting social justice and internationally recognised human and labour rights. Established in 1919, it brings together governments, employers, and workers from its member states to set labour standards, develop policies, and devise programs that promote decent work and improve working conditions worldwide.

[95] Ader, M. and Ader E. (2020). A map of the ILO's seafarer abandonment database, with additional information on companies taken from the IMO Web Accounts database. Last updated: 12/11/2020. https://safety4sea.com/map-depicts-crew-abandonment-incidents-around-the-world/?
Web Map by sj_mapper. Item created: Sep 20, 2020; Item updated: Jan 28, 2021. www.arcgis.com

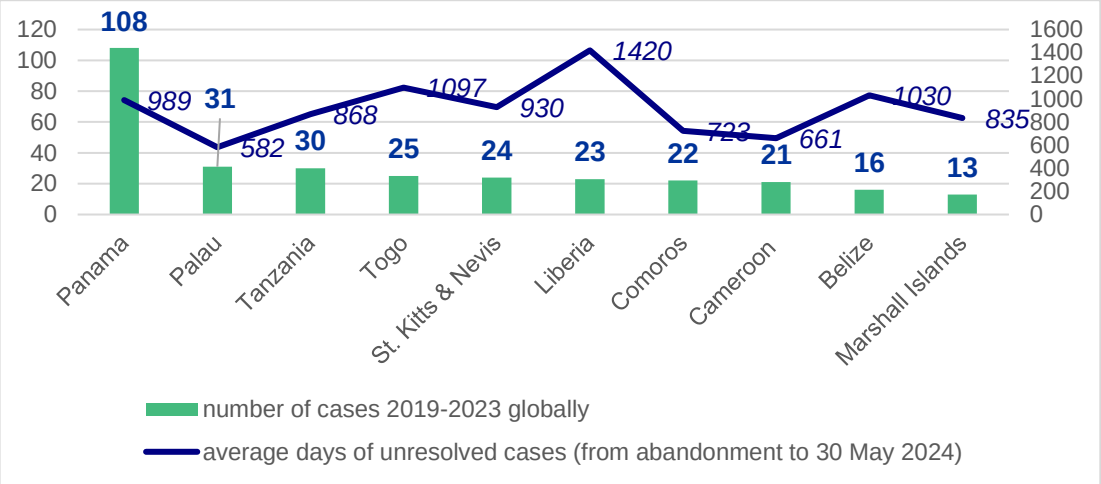


Figure 26: Top-10 FOC involved in seafarer abandonment per number of cases and average days of abandonment in 2019-2023 [96]

Figure 27 shows the frequency of OR in recorded abandonment cases for the period 2004-2023. Overall, 508 cases of seafarer abandonment have been reported globally. Panama has the highest rate of recorded abandonment cases over the last 20 years (2004-2023), followed by Liberia.

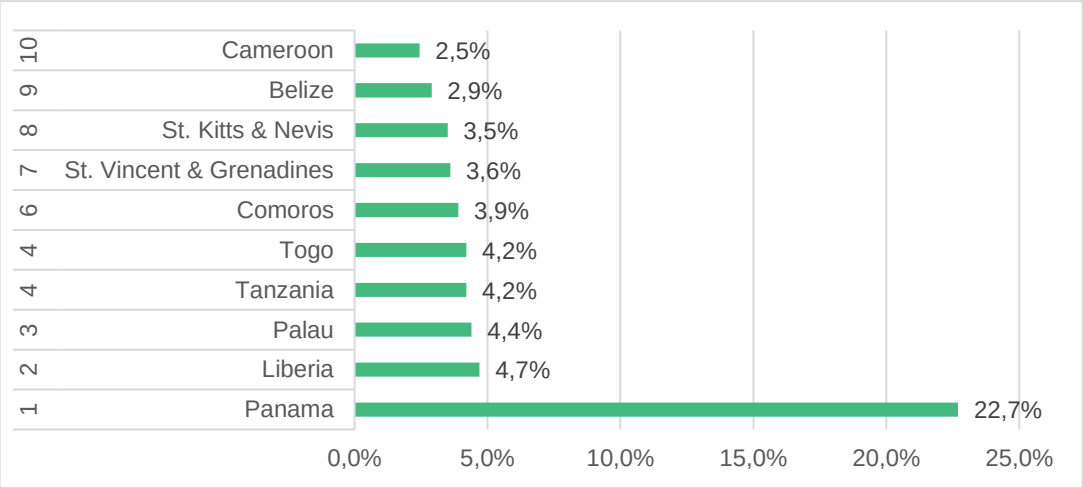


Figure 27: Frequency of FOC among recorded abandonment cases 2004-2023[97]

[96] Processed data from ILO/IMO Joint Database on Abandonment of Seafarers. https://wwwex.ilo.org/dyn/r/abandonment/seafarers/home The joint database, hosted by the ILO, tracks reported incidents of seafarer abandonment, providing critical information on past and current cases. This includes abandoned fishers and seafarers, helping to facilitate coordinated responses from authorities, international organizations, and the maritime community. The database was established with the support of the International Ship Suppliers & Services Association, following a 2004 initiative by the Joint IMO/ILO Ad Hoc Expert Working Group on Liability and Compensation for Death, Injury, and Abandonment of Seafarers.

[97] Processed data from ILO/IMO Joint Database on Abandonment of Seafarers (2004-2023).

iii) Piracy and Armed Robbery

The number of piracy[98] and armed robbery[99] attacks is a crucial indicator of the threats facing the global maritime workforce and is directly relevant to seafarers' social and labour issues. These attacks represent a significant occupational hazard that impacts seafarers' mental and physical health, employment rights and overall well-being. The kidnapping, violence and prolonged hostage situations that seafarers face in these attacks create a severe psychological toll, including post-traumatic stress disorder (PTSD), anxiety, and depression, that can last long after the seafarers' release. From an employment and financial perspective, the attacks led to employment termination, non-payment of wages, and lack of compensation for injury or death, having left seafarers and their families in a precarious financial situation, without a safety net during or after a crisis.

The MLC, 2006 requires States and shipowners to provide seafarers with a safe and secure workplace, fair terms of employment, and social protection. Piracy and armed robbery are a direct challenge to these principles, highlighting a need for stronger enforcement and support mechanisms. The 2018 amendments to the MLC, which came into force on 26 December 2020, were a direct response to this, ensuring that seafarers held hostage due to piracy continue to receive wages and are repatriated at no cost. The changes require member States to ensure that seafarer employment agreements (SEA) shall continue to have effect while seafarers are held captive on or off their ships as a result of acts of piracy or armed robbery against ships. Shipowners must continue to pay wages and other entitlements during the entire period of being held hostage.

[98] Piracy consists of any of the following acts (UNCLOS 1982, Article 101): (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed: (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft; (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State; (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft; (c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b). The amendments of 2018 to the MLC 2006 adopted the definition of piracy under international law, inserting a new provision 7(a) in Standard A2.1 - seafarers' employment agreements to expressly stipulate that "piracy shall have the same meaning as in the United Nations Convention on the Law of the Sea 1982".

[99] Armed robbery against ships is defined [IMO Resolution A.1025(26), Annex, paragraph 2.2] as "any unlawful act of violence or detention or any act of depredation, or threat thereof, other than the act of piracy, directed against a ship or persons or property on board such a ship, within a state's jurisdiction over such offences". The amendments of 2018 to the MLC, 2006 adopted the definition of armed robbery against a ship in the Code of the IMO, and inserted a new provision 7(b) in Standard A2.1 - seafarers' employment agreements to expressly stipulate that "armed robbery against ships means any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or persons or property on board such a ship, within a State's internal waters, archipelagic waters and territorial sea or any act of inciting or of intentionally facilitating an act described above".

A vessel's flag State is responsible for enforcing the MLC, 2006 on ships flying its flag, including ensuring seafarers' rights are upheld during piracy or armed robbery incidents. However, enforcement can be inconsistent, especially when attacks occur in territorial waters, where the distinction between piracy and armed robbery complicates jurisdiction and legal responses. Armed robbery within territorial waters is primarily governed by regional agreements, which often create enforcement challenges (Bunga 2021;[100] Nordfjeld and Dalaklis 2021;[101] Beckman and Page 2014[102]). These highlight broader issues of effective ocean governance[103] and are closely linked to maritime security (Nordfjeld and Dalaklis 2021).[101] When a security incident, such as piracy or armed robbery at sea, occurs, it must not only be formally reported to the IMO but also be followed by an official investigation. The findings of that investigation must then be shared with the IMO so the global maritime community can learn from the incident(IMO 2009).[104]

Also, due to the shipowners' lack of financial guarantees, the entitlements to wages and repatriation costs conferred on seafarers might be void or extremely difficult for them to claim. In practice, there is no suitable legal mechanism for risk diversification of wage loss among captive seafarers, unless it is permitted under the maritime law principle of general average, which can be covered by

[100] Bunga, G. A. (2021). The regulation of piracy and armed robbery at sea in international law. Jurnal Hukum Dan Peradilan, 9(3), 425–448. https://doi.org/10.25216/jhp.9.3.2020.425-448

[101] Nordfjeld, A., & Dalaklis, D. (2021). Repercussions of a weak ocean governance and a non-existent maritime security policy: The resurgence of piracy and Armed Robbery in the Gulf of Mexico. Journal of International Maritime Safety, Environmental Affairs, and Shipping, 5(2), 62 - 73. https://doi.org/10.1080/25725084.2021.1925461.

[102] Beckman, R., Page, M. (2014). Piracy and Armed Robbery Against Ships. In: Gill, M. (eds) The Handbook of Security. Palgrave Macmillan, London. Chapter 11, pp. 234-255. https://doi.org/10.1007/978-1-349-67284-4_11

[103] Ocean governance means the coordination of various uses of the ocean and protection of the marine environment. It is also defined as the necessary process to sustain ecosystem structure and functions (Pyć 2016). An effective ocean governance requires the implementation of globally agreed international rules and procedures, regional actions based on common principles, and national legal frameworks and integrated policies. These policies shall include aspects related to maritime security as port and maritime security, piracy, terrorism, transnational organized crime, illegal migration, unlawful fisheries and proliferation of drugs and weapons (Nordfjeld and Dalaklis 2021).

[104] IMO Resolution A.1025(26) on the "Code Of Practice for the Investigation of Crimes of Piracy and Armed Robbery Against Ships," urges Governments "to implement the Code of Practice, to investigate all acts of piracy and armed robbery against ships under their jurisdiction, and to report to the Organization pertinent information on all investigations and prosecutions relating to these acts so as to allow lessons to be learned from the experiences of ship-owners, masters and crews who have been subject to attacks, thereby enhancing preventative guidance for others who may find themselves in similar situations in the future". https://wwwcdn.imo.org/localresources/en/OurWork/Security/Documents/A%2026-Res.1025%20-%20Adopted%20on%202%20December%202009%20(Agenda%20item%2010)%20(Secretariat).pdf

commercial insurance (Zang, Chen, Zang, and Zang 2021).[105] Therefore, the shipowner's choice of flag directly influences the actual enforcement of MLC provisions and the effectiveness of maritime security. Seafarers working on FOC-flagged vessels facing piracy or armed robbery are particularly vulnerable, as weak regulatory oversight and limited flag State intervention make their protection far more difficult.

Various international initiatives have been taken to mitigate the risk of piracy and armed robbery. They include bolstering naval presence in high-risk areas, enhancing ship security protocols, and fostering international cooperation to prevent attacks and ensure crew safety. As a result, ships registered with countries actively participating in counter-piracy efforts—such as the United States, NATO members and allied nations—may benefit from more consistent protection due to frequent patrols and operations in vulnerable regions. For example, vessels under EU registers are generally not reported as piracy targets.

By contrast, OR offer limited naval protection and instead permits private security solutions, such as armed guards on board. As depicted in Table 9, OR are more likely to be targeted for piracy and armed robbery attacks.[106]

Groups of registration	2019	2020	2021	2022	2023	sum per group	%
European flags[107]	27	31	32	15	24	129	17.8
non-EU closed flags[108]	33	37	29	25	30	154	21.3
Open registers	102	127	71	74	66	440	60.8

Table 9: Number of piracy and/or armed robbery attacks per grouping of registers of the vessels affected (Jan-Dec 2019-2023)

This is the case of Liberia, Panama, and the Marshall Islands, whose vessels scored the highest number of attacks (Figure 28).[106] In addition to reflecting the fact that they are the largest registers, this also indicates that pirates primarily target high-value assets, such as ships and cargo, registered under FOC, because they do not enjoy the diplomatic and, in some cases, military protection of the States whose flags they fly.

[105] Zhang, L., Guo,L., Zhang, X., & Zhang, P. (2021). Legal issues on wage protection of seafarers held hostage by pirates. Maritime Technology and Research, 3(3), 268-279. https://doi.org/10.33175/MTR.2021.248808.

[106] Processed data from ICC IMB (2024). Piracy and Armed Robbery against ships. Report for the period 1 January - 31 December 2023. ICC International Maritime Bureau, London, January. https://www.icc-ccs.org/reports/2023_Annual_IMB_Piracy_and_Armed_Robbery_Report_live.pdf

[107] European flags: Austria, Belgium, Cyprus, Denmark, France, Germany, Gibraltar, Greece, Italy, Luxemburg, Malta, Netherlands, Norway, Portugal, Spain, Switzerland.

[108] Non-EU closed flags: Brazil, China, India, Indonesia, Japan, South Korea, Libya, Philippines, Saudi Arabia, Turkey, UK, USA, Vietnam.

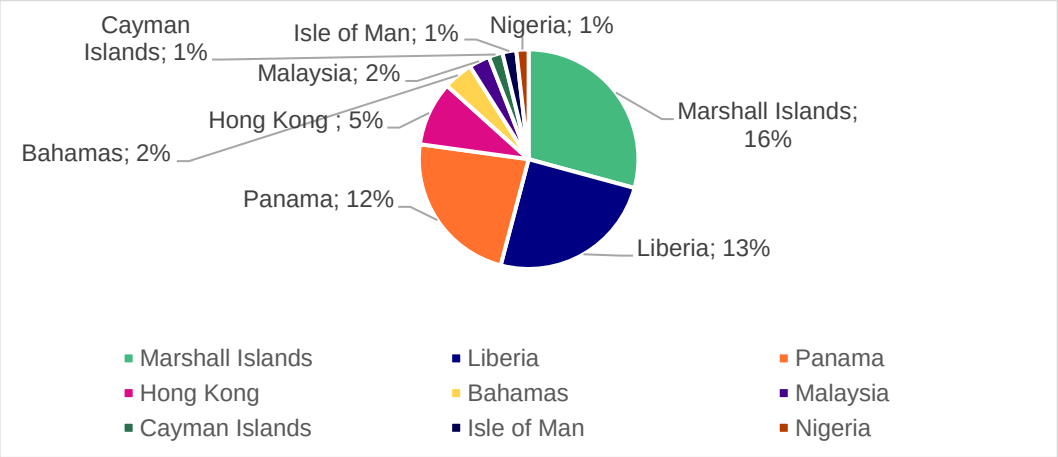


Figure 28: Major OR affected by piracy and/or armed robbery reported in Jan-Dec 2019-2023 (Percentages compared to total numbers globally)

Figure 29 provides a breakdown of flag States of OR vessels affected by piracy and/or armed robbery, Jan-Dec 2019-2023 (actual total numbers included).[106] The top-3 OR being affected during the given period are Marshall Islands, Liberia and Panama, which altogether score 41% of the total number of piracy and/or armed robbery reported in 2019-2023 (with 114, 97 and 90 reported cases respectively).

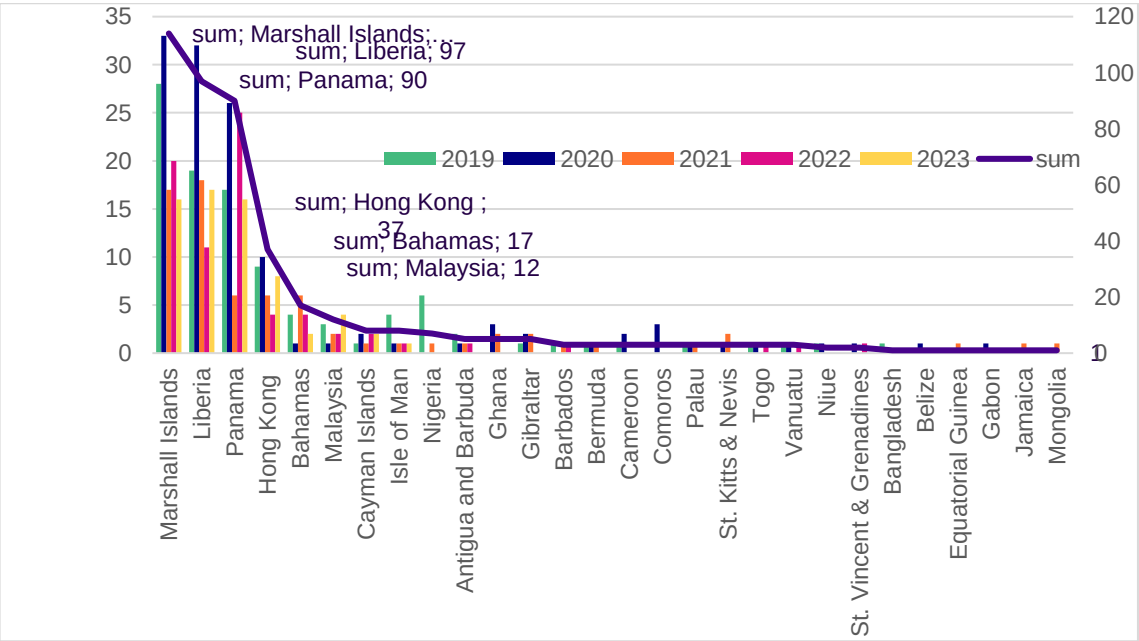


Figure 29: Breakdown of flag States of OR vessels affected by piracy and/or armed robbery Jan-Dec 2019-2023 (actual total numbers included)

iv) Occupational hazards in shipbreaking yards

Labour-related risks induced by FOC not only occur on board vessels. In most shipbreaking yards located in South Asia, workers are exposed to numerous

occupational hazards due to weak regulations and enforcement, as well as a lack of transparency in these facilities. This includes elevated rates of injury and fatality, a paucity of safety measures, and severe pollution. The high incidence of injuries, accidents, and fatalities results from explosions, suffocation, falls, the handling of heavy objects, exposure to dangerous substances such as asbestos, inhaling toxic fumes, and improper waste disposal. In addition, poor living conditions, low wages, and long working hours contribute to a deterioration in their overall quality of life. The unregistered status of many migrant workers severely hinders accurate injury tracking and denies injured individuals their rightful compensation.

Furthermore, environmental contamination poses significant health concerns for workers and nearby communities, including respiratory illnesses resulting from exposure to toxic dust. Despite the implementation of regulatory measures, the general level of enforcement remains inadequate.

The prevalence of child labour is particularly evident in Bangladesh, where 13% of the workforce is comprised of individuals below the age of 18. These children often work night shifts to circumvent inspections, thereby facing the same hazards without the benefit of proper protective equipment. Additional analysis is included in Annex section 8.4.4.

Notwithstanding the implementation of training programmes and the introduction of a Ship Recycling Code in 2013, unsafe practices persist in the facilities of Alang-Sosiya, India. Chattogram, Bangladesh, which commenced shipbreaking operations in the 1960s, has a history of accidents, worker exploitation, and environmental damage. Between 2009 and 2018, over 19,000 workers died or sustained injuries. Pakistan's shipbreaking industry remains unregulated, as evidenced by the 2016 explosion in Gadani that resulted in the deaths of 29 workers (NGO Shipbreaking Platform 2016)[109]. China has invested in safer facilities but continues to grapple with managing hazardous waste. The Aliağa region of Turkey has experienced improvements following international scrutiny yet still faces challenges in preventing pollution and ensuring the safety of workers.

2.2.7. Dark Fleets and Sanctions Evasion

While there is no universally accepted definition, the term ‘dark shipping’ or ‘dark fleet’ refers to a group of vessels that operate covertly to avoid detention or monitoring. These vessels usually turn off the Automatic Identification System

[109] Press Release. NGOs denounce dangerous working conditions after major explosion at Gadani shipbreaking yard in Pakistan killing at least 21 workers. November 1. Online: https://shipbreakingplatform.org/press-release-ngos-denounce-dangerous-working-conditions-after-major-explosion-at-gadani-shipbreaking-yard-in-pakistan-killing-at-least-21-workers/

(AIS)[110] transponder, engage in illegal activities, such as IUU fishing, smuggling, or sanctions evasion. They aim to avoid scrutiny. In some cases, ghost ships might end up in dark fleets. A ‘ghost ship’ is a vessel that is typically operationally or even physically abandoned. Such ships pose predominantly safety and environmental risks.[111] The terms “dark fleet” or “shadow fleet” (often used interchangeably with “ghost fleet” in various sources) refer to a growing number of vessels, engaged in dark shipping, often aged over 15 years (in almost 70% of the vessels[112]) and poorly maintained, used to circumvent sanctions. While ships engaged in dark shipping are generally aged vessels, some fleets have begun incorporating middle-aged ships to evade detection.

Windward's Maritime AI platform[113] categorises vessels involved in potentially illicit or sanction-evading activities into three distinct groups, collectively forming what is often called the "shadow fleet": (a) the Cleared Fleet (approximately 75% of the total), comprising legitimate vessels that operate within established regulations and exhibit no suspicious behaviour; (b) the Gray Fleet (around 10%), consisting of vessels with ambiguous ownership structures, frequently flagged under new companies or flags of convenience, and often engaged in transporting Russian oil to countries not participating in sanctions; and (c) the Dark Fleet (approximately 15%), characterised by the use of "dark activities"—such as disabling AIS and tampering with vessel identity or location data—to obscure their movements and operations. While the term "shadow fleet" is broadly used to encompass both the grey and dark segments, clarification is important as the "dark fleet" represents only the most covert and deceptive subset within this larger grouping.

The dark fleet is characterised by tenuous ownership structures and the frequent use of multiple FOC.[114] Grey and dark fleet vessels (the “shadow” fleet) have significantly increased in size and activity since Russia‘s war of aggression against Ukraine. They primarily transport Russian crude oil to countries like India (27%), China (32%) and Turkey (14%). EU destinations are also reported (12%) for oil products.

[110] Automatic Identification System (AIS) is a maritime tracking technology that uses transponders on ships to broadcast their position, speed, and course to improve safety and navigation.

[111] Issues related to ‘ghost fishing’ as well as to the proposal for using new tools to support clean and modern shipping (see https://ec.europa.eu/newsroom/mare/items/628060/en) are also considered in the EU policy making procedure.

[112] See Annex section10 for age and flag distribution and other relevant information about business models.

[113] Winward’s Maritime AI™ https://windward.ai/solutions/risk-and-compliance/ This platform integrates vessel tracking data, ownership information, and behavioral analytics to identify risks related to compliance, security, and illicit maritime practices.

[114] Many vessels of the grey fleet frequently change flags (flag hopping); Windward claims the identification of over 1,000 grey fleet vessels globally and approximately 1,300 vessels within the dark fleet. MarineForum.online, Feb 20, 2025 https://marineforum.online/en/about-the-term-shadow-fleet-dark-fleet-grey-fleet/?

Some of the flags commonly associated with the shadow fleet include Panama (17%), Liberia (14%), Marshall Islands (11%) and Russia (13%) (Annex section 9.2). Other flags allegedly leading the dark and grey fleet to circumvent Russia sanctions are Comoros and Gabon. Windward notes that Gabon is a new popular FOC with 5.6% among the dark and 5.5% of grey fleet vessels.[115] As sanctions imposed on countries like Venezuela and Iran have been in place for several years,[116] their national flags appear to score low in the identified dark fleet: Venezuela represents 0.7% of the dark fleet, while Iran accounts for 5%. Three significant FOC, Panama, Liberia and the Marshall Islands, are involved in sanctions evasion and possibly in other illicit activities, including money laundering.[117] All three countries are vulnerable to money laundering due to weak regulations and enforcement.[118]

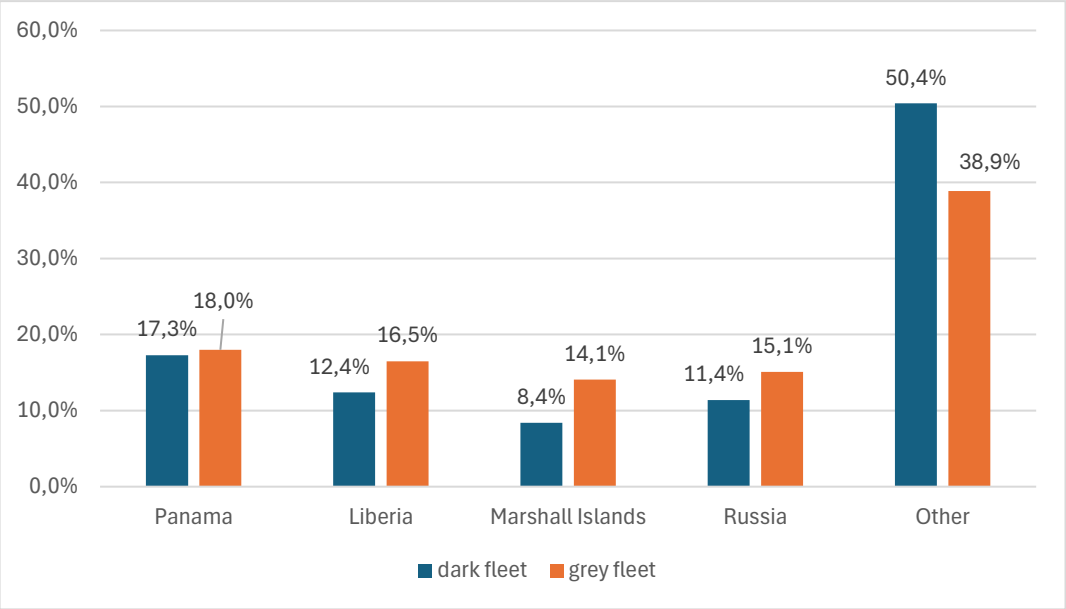


Figure 30: Flag distribution for Dark and Gray Fleet vessels (2023) [119]

[115] the expansion and increased utilization of Gabon as a flag of convenience started notably around early 2022, coinciding with Western sanctions on Russia. Since then, Gabon's registration numbers—and its profile as a flag state—have increased notably.

[116] Sanctions against Iran, initiated by the U.S. in 1979, primarily target its nuclear program, support for terrorism, and human rights issues, mainly impacting its oil and financial sectors (Source: US Department of State. https://www.state.gov/iran-sanctions/. U.S. sanctions on Venezuela, greatly expanded from 2017-2019, aim to pressure the Maduro government over human rights abuses and anti-democratic actions by largely targeting its oil industry and international finance access (Source US Department of State. https://www.state.gov/venezuela-related-sanctions/

[117] Processed country-specific data are from the Global Organised Crime Index by the Global Initiative Against Transnational Organised Crime [https://ocindex.net/]

[118] See Transparency International website: Panama ranks 108 and Liberia 145 out of 180 States: https://images.transparencycdn.org/images/CPI-2023-Report.pdf

[119] Source: Processed data from Windward's Maritime AI™

The fleets evading sanctions can also be involved in laundering money (Chambers, 2025)[120] and other illicit activities, such as smuggling and human trafficking. By disabling or tampering the AIS signals the position of the vessels is concealed as well as the true route; therefore, it is possible to hide illicit cargo transfer, such as crude oil and its products, that generates the profits requiring laundering. Moreover, layers of opacity are achieved by clandestine ship-to-ship (STS)[121] transfer of bulk liquids. STS operations deem tracking of the origin and destination of the cargo almost impossible.

The shadow fleet facilitates money laundering primarily through using the tonnage for goods resulting from covert activities as well as using complex networks designed to obscure financial transactions[122] (See Annex section 9 for details on the impact of operation of the 'ghost' fleet and relation to money laundering and other illicit activities). This is supported by investigations (OCCRP 2025)[123] into the sales of older tankers to shadow fleets, where ownership is purposefully obscured through multiple shell companies.[124]

FOC vessels can be used to manipulate trade transactions, such as over- or under-invoicing, to move illicit funds. The Report issued by the Financial Action Task Force (FATF- Egmont Group)[125] explains the general typologies of Trade-Based Money Laundering. Although the report does not exclusively single out FOC, it does explain the methods used to launder money through the manipulation of trade, in which FOC play a role. The first step is to obfuscate ownership and control of the ships, and this is the stage of the illicit activity where

[120] Chambers, S. (2025). Probe reveals more than $6bn in shadow fleet deals. Splash247.com, February 5. See https://splash247.com/probe-reveals-more-than-6bn-in-shadow-fleet-deals/

[121] Ship-to-ship (STS) transfer is the direct transfer of cargo between two vessels at sea, often used to save costs or avoid port calls, but it also carries environmental and safety risks.

[122] The connection between shadow fleet operations and money laundering is exemplified by the case of Jugwinder Singh Brar, an Indian national based in the UAE. Brar coordinated with Iranian and Houthi networks to smuggle oil using a fleet of vessels registered under opaque ownership structures. Payments for these illicit oil shipments were funnelled through a complex web of shell companies and front businesses, effectively obscuring the origin and destination of funds. This network laundered hundreds of millions of dollars in oil revenues, integrating them into the legitimate financial system. The U.S. Department of the Treasury sanctioned Brar and his associates in 2025, highlighting the sophisticated financial mechanisms employed to facilitate both sanctions evasion and money laundering through shadow fleet operations.

[123] OCCRP (2025). European Ships Keep Russia's Shadow Fleet Afloat. Report from Follow the Money and the Organised Crime and Corruption Reporting Project (OCCRP), February 4. Source: https://www.occrp.org/en/investigation/european-ships-keep-russias-shadow-fleet-afloat

[124] As defined by the Global Financial Integrity, a shell company is a legal entity that conducts little to no actual business. Instead, they typically exist and function entirely on paper with the sole purpose of owning assets and conducting financial transactions. Source: https://gfintegrity.org/issue/anonymous-shell-companies/

[125] Financial Action Task Force (FATF) – Egmont Group (2020), Trade-based Money Laundering: Trends and Developments, FATF, Paris, France. https://www.fatf-gafi.org/content/dam/fatf-gafi/reports/Trade-Based-Money-Laundering-Trends-and-Developments.pdf

the role of FOC becomes critical because it allows registration of ships with obscured ownership details that do not allow tracing the Ultimate Beneficial Owner (UBO)[126]. Obscurity and a general lack of transparency in all levels of transactions are achieved by using shell companies registered in jurisdictions with financial disclosure requirements. These shell companies act as intermediaries, hiding the involvement of sanctioned individuals or companies and, in many cases, also of the involved sanctioned States and maintaining offshore accounts, including cryptocurrencies, to shroud the transaction trail

In addition, shadow fleet operators utilise jurisdictions and ports with lax customs enforcement or ports in States that are not sanctioned, and retain open trade routes with sanctioned States. These regions or States become gateways for integrating illicit funds into their formal financial system, through falsified documents that over- or under-value the transferred cargo. The profits accrued by the operators are reinvested into other sectors, such as real estate or legitimate maritime ventures, through the States that facilitate the circumvention by offering their ports and the ‘gateway’ services.

3. Business models of actors of the value chain

The key actors of the maritime transport value chain are depicted in Figure 31, and briefly described in Table 11. For a detailed analysis of their roles and responsibilities, see Annex section 10.1.

[126] The Ultimate Beneficial Owner (UBO) is the natural person who controls a legal person or a legal arrangement, sometimes through complex chains of ownership or control. Under Directive (EU) 2015/849, also known as the Fourth Anti-Money Laundering Directive (AMLD4), a Ultimate Beneficial Owner (UBO) is defined as: Any natural person(s) who ultimately owns or controls a legal entity or arrangement, and/or the natural person(s) on whose behalf a transaction or activity is being conducted. Key Criteria for Identifying a UBO (Article 3(6) of AMLD4) include: For corporate entities, a UBO is a person who: Directly or indirectly owns more than 25% of the shares or voting rights; Exercises control via other means, such as influence over decision-making or management; If no UBO is identified, the senior management official may be considered the UBO.

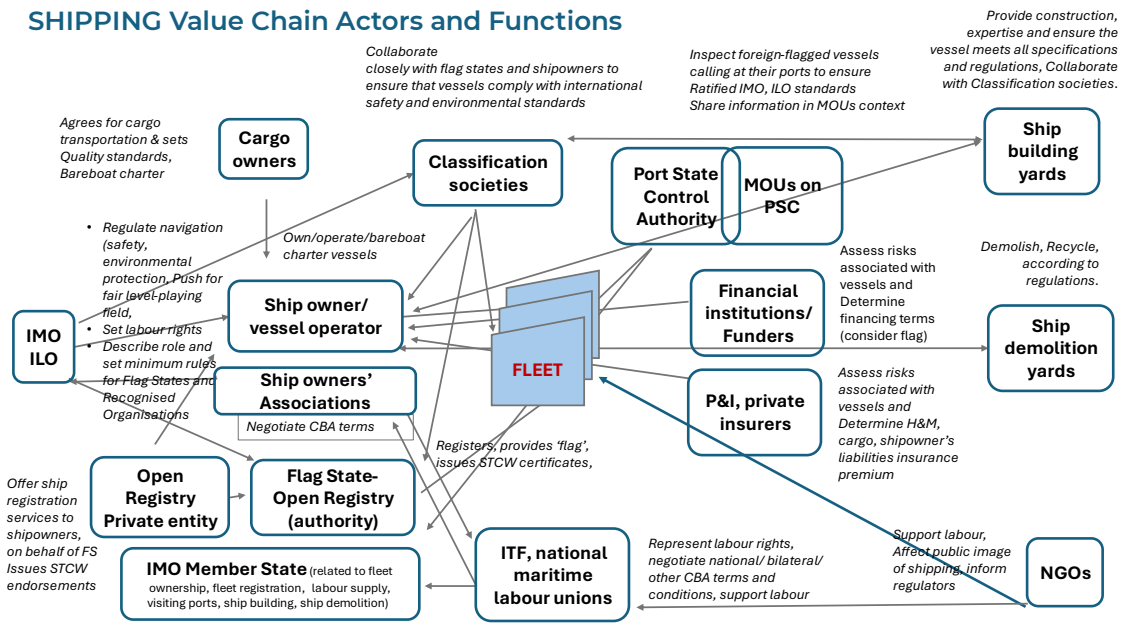


Figure 31: Value chain actors in maritime transport and critical functions

3.1. State authorities

Flag States must exercise jurisdiction and control over their ships in areas such as safety, taxation, and pollution regulation. They conduct regular inspections to ensure compliance with international regulations and may operate closed, open or international (parallel) registers. Closed registers enable better oversight and protect domestic interests, while open registers allow foreign owners to register without nationality requirements. Flag States earn revenue from taxes and fees based on tonnage and document issuance.

Port States inspect foreign vessels in their ports to ensure compliance with international standards, with a focus on safety, crew qualifications, and pollution control. They are particularly concerned with OR vessels where FOC practices may not be followed, and therefore, compliance with international standards may be in question. The performance of a flag is assessed through inspections of vessels calling at foreign ports, with vessels flying non-compliant flags facing detentions and bans, which in turn influences shipowners to choose more compliant flags.

Maritime labour-supplying States accredit training institutions, medical centres/ hospitals, and issue certifications to ensure seafarers meet international standards that enable them to be employed on board vessels worldwide. These States also provide welfare services and ensure that recruitment services offered within their jurisdiction protect seafarers from exploitation. Maritime labour-supplying States gain significant benefits from their seafarers working on foreign-flagged vessels, which include economic contributions through remittances and foreign exchange earnings, thereby supporting national development and financial stability. Additionally, they create employment opportunities for their

citizens within the maritime sector, including jobs in seafaring, training, recruitment, and other related fields. Seafarers also gain valuable skills and international experience, enhancing the country's maritime workforce. These States create a strong international reputation and strengthen diplomatic and economic ties with other maritime States, while contributing to the growth and competitiveness of their domestic shipping industries.

The specific case of the cruise sector

Both economic strategy and legal constraints shape the relationship between cruise ship flags and destinations. Cruise ship owners often register their vessels under open registers, such as those in the Bahamas or Panama, to reduce costs and regulatory burdens. Cruise operators, focused on itinerary planning and passenger services, benefit from this model but must also comply with U.S. laws when sailing from American ports. Chief among these is the Passenger Vessel Services Act (PVSA) of 1886, which prohibits foreign-flagged ships from transporting passengers directly between U.S. ports without a stop at a foreign port.[127] This requirement significantly influences route design and often dictates which destination ports are included, favouring those outside the U.S., even when they are not commercially ideal. While open registers offer financial and regulatory incentives, they may also dilute oversight, raising concerns over labour standards, safety, and environmental performance. In this system, FOC serve as enablers of global cruise operations, striking a balance between regulatory compliance and commercial efficiency.

3.2. Key private actors

Shipowners in the shipping industry operate within a multifaceted business model that involves capital investment, revenue generation, and cost management. They invest in vessels financed through debt, equity or leasing, and generate revenue primarily through freight charges from various chartering options, including time charter (where vessels are leased for a specified period and owners usually receive a fixed daily rate), voyage charter (where usually a fixed fee for transporting cargo on a specific journey applies, often charged per ton of cargo) or bareboat charter (which is similar to a rent that is charged for the vessel without providing crew or provisions). Efficient operating cost management, encompassing crew wages, fuel, maintenance, and regulatory compliance, is essential for achieving profitability. To navigate market fluctuations, shipowners may secure long-term contracts, build strong client relationships and diversify

[127] The Passenger Vessel Services Act of 1886 restricts the transportation of passengers between U.S. ports to vessels that are U.S.-built, U.S.-owned, and U.S.-flagged. Foreign-flagged vessels may operate between U.S. ports only if they include a stop at a “distant foreign port.” The law was intended to protect U.S. shipbuilding and continues to affect cruise itineraries (U.S. Congress, 1886/46 U.S.C. § 55103).

their offerings with additional services such as logistics and supply chain management.

While shipowners prioritise asset management and value optimisation, ship management companies concentrate on operational efficiency and compliance with international standards and rules at a minimum level and cost. Ship management and crewing companies generate revenue through service contracts, focusing on reducing operational expenses rather than directly controlling chartering schemes and freight income. Third-party vessel operators, crewing companies and manning agencies share similarities with ship managers.

Private entities operating open registers generate revenue primarily through registration and annual renewal fees, as well as through additional services such as inspections, insurance brokerage, and legal counsel. A key competitive feature of their business model is the streamlined online 24/7 services, which support quick registration—a critical advantage in the sales and purchase of vessels — and the submission of digital documents. This comprehensive service model, combined with reduced regulatory burdens and operational costs, makes open registers an attractive option for shipowners in the global shipping market. Further discussion on the specific business models of private entities operating open registers is presented in section 4.

The members of the International Association of Classification Societies (IACS)[128] adhere to rigorous international standards and provide classification and statutory survey services. Their revenue is generated from various services, including surveys, research, consultancy, training, and certification. The requirement for global reach and a network of surveyors, as well as their market reputation, allows them to leverage economies of scale and attract more significant projects. IACS members invest in research and development and participate in international initiatives to enhance maritime safety and environmental performance.

In contrast, non-IACS classification societies,[129] lacking the same level of recognition and credibility, often focus on specific regional markets or niche sectors. Their business model is more flexible but may face limitations in scale and profit margins. As they do not bear the high fixed costs of IACS, they may offer lower fees mainly to older tonnage, potentially compromising on quality and compliance.

[128] The International Association of Classification Societies (IACS) is a global organization of leading ship classification societies that develops and maintains technical standards for the design, construction, and maintenance of ships and offshore structures.

[129] While they may provide classification and certification services, non-IACS societies generally operate outside the recognised framework of international maritime safety standards, and their certificates may not carry the same level of acceptance by flag states, insurers, or port authorities.

Protection & Indemnity (P&I) Clubs[130] and Hull & Machinery (H&M)[131] insurers manage maritime risks. P&I Clubs cover third-party liabilities like injury, cargo damage, pollution and collisions, operating on a mutual basis with shipowners paying premiums for coverage. H&M insurers cover physical damage to vessels. Both types of insurers use reinsurance to manage large losses. Other insurers provide cargo insurance, liability coverage, and specialised insurance for niche maritime sectors.

The business model of financial institutions, banks, and private funders in the shipping industry is essential for facilitating investments, managing risk, and providing liquidity. Banks offer loans specifically for the purchase of vessels, securing the loan against the ship itself, which are often structured with favourable terms given the asset-backed nature of the loans. They also provide shipowners with flexible financing options to cover operational expenses and fluctuations in cash flow. Private equity firms may invest directly in shipping companies, acquiring stakes in exchange for capital, which can be used for fleet expansion, renewal or modernisation. Shipping companies can raise equity through initial public offerings (IPO), allowing investors to buy shares in the company.

3.3. Organised and non-organised labour

The International and European Transport Workers' Federations (ITF and ETF)[132] advocate for seafarers' rights, particularly those on vessels registered under FOC. These federations, representing organised labour, negotiate for better wages and working conditions and campaign against FOC, aiming to close regulatory gaps that benefit shipowners. Their business model centres on collective bargaining, legal support, and recovering compensation for seafarers.

Open registers reduce the influence of national unions, leaving workers with limited bargaining power, as they lack direct contracts with unions while onboard. For individual workers, such as seafarers in the commercial shipping, cruise, and fishing industries, the lack of nationality restrictions under FOC leads to cost-

[130] Protection & Indemnity (P&I) Clubs are not-for-profit mutual associations that provide shipowners and charterers with insurance against a broad range of third-party liabilities arising from ship operations—such as injury or death of crew and passengers, cargo loss or damage, pollution, wreck removal, and collision liabilities—by pooling member contributions to pay claims and offering legal, technical, and loss prevention support

[131] Hull & Machinery (H&M) insurers offer commercial insurance policies that protect shipowners against physical loss of or damage to their vessels' hull, machinery, and equipment, covering risks like collision, grounding, fire, and machinery breakdown, and may also include business interruption and additional perils as specified in the policy.

[132] The International Transport Workers' Federation (ITF) is a global union federation that protects and advances the rights and working conditions of transport workers worldwide through international solidarity and advocacy, while the European Transport Workers' Federation (ETF) represents and defends the interests of transport and fisheries workers specifically at the European level, making representations to EU bodies and coordinating trade union policy across Europe.

saving opportunities for shipowners but often results in poor working conditions and exploitation.

Demolition workers in shipbreaking yards, especially in developing countries, also face unsafe, low-paid work, with FOC contributing to these risks by bypassing regulatory standards to reduce operational costs, which, in turn, affects the condition of the vessels sent for dismantling.

3.4. Non-governmental organisations

NGO focus on advocating for sustainability, human rights and environmental protection within the industry. Their business model involves lobbying for stronger regulations, transparency, and accountability from shipowners, pushing for stricter enforcement of international standards. They conduct research, run public campaigns, and collaborate with governments, academic institutions, and other organisations to address gaps in governmental and intergovernmental regulations. They encourage shipowners to reconsider their use of FOC, encouraging them to adopt higher-standard flags to avoid reputational damage and align with corporate social responsibility while also shaping the regulatory landscape for the maritime industry.

4. Key features of open registers run by private entities

Open registers exhibit several key features when operated by private businesses. This section delves further into the business models of privately operated registers by examining the dynamics of offer and demand, and estimating the economic value of OR operations.

4.1. Commercial, business and financial structures of open registers run by private entities

Table 10 shows that the commercial, business and financial structures of FOC managed by private entities exhibit distinctive features. They prioritise flexibility, profit generation, and customer service, offering additional services like certification and compliance consulting. Revenue primarily comes from registration fees and supplementary services, with some shared with the flag State, ensuring mutual financial benefits.

Beyond registering vessels, private companies compile and typically offer services such as company searches, credit reports, and due diligence. They are located worldwide and are often specialised in providing business information linked to financial service companies or risk management companies.

The ownership of the FOC is not known, and it is almost impossible to obtain credible information on the ownership agreements of the entities managing and operating the registry due to protection clauses or provisions in the applicable State legislation.

In most cases, a new entity is established in a business-friendly jurisdiction to operate the registry. Ownership may be divided among the representatives of the State and private investors. It is possible that the State does not directly own a share in this new entity, but a service-level agreement (SLA)[133] is concluded. This SLA sets minimum business targets, specifically the number of ships under the registry and the level of revenue generated from the issuance of certificates. It is possible to specify guidelines for the quality of the tonnage being targeted; however, market observations do not provide such evidence, especially with registers that emerge and decline within a short period of time.

The OR-operating entity is not accountable to the State's public administration. It does not have a public service mandate nor the obligation to promote national policies unless this is stipulated in the SLA agreement between the FOC and the State. Agreements based on the RO Code,[134] however, require that these responsibilities be clearly stipulated. Social and broader policy objectives may not be included, as the open registry is primarily focused on ships engaged in international trade, which are generally not owned by local entities. These assets are, in some cases, considered foreign direct investments when registered under the flag of a third country, where the genuine link is not established. However, the public authority can decide to place any conditions or objectives, as part of, or in addition to, the international and local laws under which they operate.

From a financial perspective, the OR-operating entity has no relationship with the State. The revenues generated by the registry are used to cover the costs of, and generate profits for, the operating entity. The State does not finance the expansion of the registry, but harnesses the benefits of a high number of registered vessels, provided that this fleet does not harm the State's reputation. Moreover, in cases of losses, the State often does not have an obligation to cover financial gaps.

Funding is provided by private shareholders and investors, who appoint a management team that enjoys autonomy and has access to the market of shipowners and of ships. Transparency levels higher than those considered in the applicable law of the agreement are not expected. In most cases, less transparency allows operators and register owners to conceal their financial incentives, motives, and actions.

[133] A service-level agreement (SLA) is a formal contract between a service provider and a customer that defines the specific services to be delivered, the expected level of performance, measurable metrics for monitoring service quality, and the responsibilities and remedies if agreed standards are not met.

[134] The term Recognised Organization (RO) is defined in footnote 23 with a reference to the relevant IMO instruments.

Commercial structure	Business structure	Financial structure
Private operation: As these registers are typically managed by private firms, they can facilitate more flexible operations and faster decision-making processes. **Operational Autonomy:** While the private entity manages the register, the Flag State may retain some authority over certain regulatory aspects in exchange for allowing the register to operate under its jurisdiction. **Monitoring and Enforcement:** While private entities facilitate the registration process, the enforcement of maritime laws often remains a responsibility of the Flag States who remain responsible for monitoring compliance and conducting inspections. **Online platforms:** Many private entities leverage technology to streamline registration processes, improve customer service, and enhance compliance tracking. Online platforms may offer real-time access to registration statuses and document management. **Profit orientation:** The primary focus of these entities is the profit-making, which influences their strategies of operation, the spectrum of the offered service, and customer relationships.	**Registration fees:** They charge fees for vessel registrations, annual or renewals, and other related services. These fees can vary based on factors such as the size of the vessel (tonnage), the type of service offered, and the jurisdiction. **Add-on services:** In addition to basic registration, they may offer services like seafarers' certifications and endorsements, seafarers' training, compliance consulting, legal advice, insurance assistance, and other services. **Marketing and branding:** The effectiveness of the private open register depends on its reputation and global reach in the shipping industry. Marketing efforts are often focused on demonstrating reliability, legal compliance, and customer service quality.	**Revenue making:** Revenue is primarily derived from registration fees, which can be influenced by market demand and competition among different registers. Add-on services also create a significant revenue based on the tonnage registered and therefore the supporting services offered at a large scale and continuous time. **Cost Management:** Operating costs of these private entities are managed efficiently to maintain profitability. This includes administrative expenses, which are kept at low levels. There are also technology investments and marketing efforts to attract registrants. **Revenue Sharing with the Flag State:** A portion of the registration fees may be shared with the Flag State, facilitating a mutually beneficial financial arrangement.

Table 10: Key features of open registers operated by private entities

Besides the newbuilding market, where the appeal of open registers is discussed in section 2, it should be noted that in the second-hand market, the speed in concluding a transaction is the key. This suggests that certificates required by sellers and buyers, which often involve two registers, should be issued in a fast and error-free manner, as they involve the transfer of large sums of money. The swift issuance of provisional certificates and the deletion from the previous registry, along with all necessary documentation for mortgages, is critical as part of the standard business practice; the sale and purchase of the ship should be completed within five working days. The need for speed requires online services from the registers, as well as the provision of 24/7 support to their clients.

The advantages of national registers considered in the previous section are not of interest to the investors of the OR, except for the financial capacity of the State to sustain losses and allocate resources as needed. The OR-operating entities are always sensitive to financial results and performance, and investors who

provide equity, know-how, and market access expect generous returns. Therefore, their primary goal is to operate a registry that addresses the industry's needs, or in other words, to be part of the solution rather than part of the problem.

4.2. Business models of ship owners using open registers run by private entities

This section examines the potential trade-offs that ship owners may face when choosing a State for registration.[135] Seen from the shipowner standpoint, Table 11 indicates the Strengths, Weaknesses, Opportunities and Threats of OR used as FOC and run by private entities, compared to those of NR. Overall, NR emphasises policy alignment and transparency but faces challenges in competitiveness, while FOC attracts investment with efficiency and flexibility but struggles with transparency and alignment with public interests. Both models face regulatory and economic pressures.

ACTIVITY	STRENGTHS	WEAKNESSES
Ownership & Accountability	National Registers (NR) are fully government-owned, ensuring alignment with national interests, enhancing transparency and public accountability. FOC operate with significant autonomy, enabling quick decision-making and market adaptability.	NR have complex government ownership structures which may result in bureaucratic inefficiencies and dependence on taxpayer funding. FOC often lack transparency and accountability, with decisions driven by commercial goals rather than public interests.
Economic Model	NR prioritise safety, national security, and environmental protection, supporting social and economic policy objectives, while FOC are financially self-sustaining through registration fees, reducing the need for State financing.	NR have limited profit motives, often focusing on essential services over efficiency and financial viability. FOC focus on low taxes and fewer regulations which may result in weak policy alignment and neglect of social or national policy goals.
Transparency and Reputation	Regular public reporting of the NR builds transparency and trust in maritime operations. FOC offer fast, flexible service, including 24/7 online options for international stakeholders.	For the NR, public funds may be redirected away from registry improvement to other services, reducing competitive investment. in FOC there is limited transparency and alignment with public policy which may harm state reputation if associated with lower performance standards.
Investor Appeal	FOC are attractive to international investors due to lower costs, favourable tax structures, and fewer regulations.	The NR have limited competitiveness due to monopolistic tendencies, reducing incentives to innovate.

[135] Further discussion available in Annex section 10.

OPPORTUNITIES		THREATS	
Business model	NR can enhance national security, promote local maritime clusters and lead in environmental and safety standards to bolster reputation. FOC have opportunities for global expansion, modernisation through technology and partnerships with private investors.	Competition in Attractiveness	NR are vulnerable to FOC competition that offer lower costs and more lenient regulatory frameworks, potentially driving shipowners away. FOC face increased regulatory scrutiny at international level that can reduce the appeal of low-cost registration and impact reputation.
Economic & Technological Growth	NR can support local economic growth by attracting vessels that benefit the domestic market and aligning with broader policy objectives, FOC have high potential to expand in emerging markets and adopt digital tools for improved service efficiency and global competitiveness.	Regulatory & Compliance	Excessive government oversight and slow adaptation to market needs can hinder NR competitiveness. FOC-vessels involved in illegal activities may harm national reputation, exposing them to image damage and potential loss of clients.
Strategic Partnerships	NR can leverage partnerships to support economic development, enhance policy enforcement, and improve international maritime compliance. FOC can collaborate with private investors, tech firms and maritime businesses to drive modernisation and boost revenue.	Economic Pressures	Economic downturns and resource limitations may strain NR ability to attract or retain fleets, significantly more compared to FOC. FOC will face growing competition from national registers if they adopt more competitive frameworks, which could reduce their market advantages.

Table 11: Combined SWOT analysis of NR and OR used as FOC

Shipowners often choose open registers operated by private companies because they offer greater operational flexibility and lower overall costs. FOC typically provide reduced registration fees, financial incentives, and rebates to attract commercial interest, which benefits private registry operators by increasing the number, size, and variety of ships on their books, regardless of the vessels' age profiles.

Additionally, open registers grant shipowners access to the global labour market, allowing them to employ crew members of diverse nationalities. This stands in contrast to closed registers, which reserve certain positions for their nationals, creating staffing challenges given the current shortage of qualified mariners in the

industry. Furthermore, shipowners who select FOC with poor compliance records and weak enforcement mechanisms may evade regulations designed to protect maritime workers, such as the provisions of the MLC. As a result, crew members on these vessels are more vulnerable to exploitation and violations of their rights.

5. FOC States: legal frameworks and revenues

This section examines the legal regimes in place, or the lack thereof, in FOC States in light of the requirements set forth by the most relevant international legal frameworks. It also examines the financial revenues generated by OR used as FOC and operated by private entities for the States concerned.

5.1. Implementation of international legal frameworks

The distribution of responsibilities among UNCLOS, IMO, and ILO provides a structured approach to maritime governance. UNCLOS is the overarching legal framework within which all ocean and sea activities should be carried out, entrusting the IMO as the relevant competent organisation, with the technical mandate of ensuring vessel seaworthiness and safety in maritime operations.

The IMO achieves this through its global regulatory framework, which is designed to regulate and enhance global maritime safety, environmental protection, and security, covering a wide range of fields, from ship design and construction to pollution prevention and the well-being of seafarers. Some of the most notable instruments include the SOLAS Convention, which governs ship safety standards, and MARPOL, which addresses environmental issues such as oil spills and air pollution.

The ILO focuses on the labour field of maritime activity, particularly seafarers' rights and working conditions, as outlined in instruments such as the MLC. This ensures that both the technical and labour-related aspects of maritime operations are comprehensively addressed.

Both IMO and ILO derive legitimacy and authority from their member States and enjoy universal applicability, technical precision and the ability to unify diverse maritime policies under internationally recognised standards. They aim at uniformity in implementation and ensuring that critical aspects of maritime safety and labour rights are addressed cohesively, supporting the objectives outlined in UNCLOS.

The more instruments a State has ratified, the higher the compliance and adherence with global standards will probably be. The level of ratification of IMO and ILO instruments is therefore a direct proof of the interest of the State to promote and safeguard vessel safety, environmental protection and the well-being of seafarers.

A novel approach to measure the level of ratification of IMO instruments is described in detail in Annex section 11.1. This metric should not be confused with other performance measures, such as those used by PSC to classify registers into white, grey, and black tiers (Figure 33). There is no precedent for such analysis in the literature.[136] The goal is to measure the number of instruments ratified using multicriteria methods, which are widely applied in the literature and papers exploring FOC issues.

Digital sources[137] of the IMO provide ratification information[138] on the 59 instruments; therefore, it is possible to measure how many States have ratified each IMO instrument. Hence, it is possible to rank States, using TOPSIS[139] to estimate an index for each State based on the number of ratifications. The higher the number of ratifications, the higher the index. This signals a substantial commitment of the State to the international maritime policy framework.

The method yielded indices (minimum, maximum, and quartile levels) for the 196 Member States of the IMO (Figure 32). Detailed analysis is provided in Annex section 11. The Member State with the lower index (32%) is Bhutan, an administration with marginal interest in maritime affairs. In comparison, the State with the highest level is Norway (62%), a leading administration in relevant issues. Overall, States interested in achieving prominence and leadership within the IMO demonstrate high levels of ratification. Indeed, SOLAS and MARPOL are ratified by most States. However, OR used as FOC appear to ratify fewer instruments.

[136] No paper examined for the scope of the literature review in Annex section 2 presented a ratification index.

[137] See Adopting a convention, Entry into force, Accession, Amendment, Enforcement, Tacit acceptance procedure - https://www.imo.org/en/About/Conventions/Pages/Default.aspx

[138] Ratification defines the international act whereby a state indicates its consent to be bound to a treaty if the parties intended to show their consent by such an act. In the case of bilateral treaties, ratification is usually accomplished by exchanging the requisite instruments, while in the case of multilateral treaties the usual procedure is for the depositary to collect the ratifications of all states, keeping all parties informed of the situation. The institution of ratification grants states the necessary time-frame to seek the required approval for the treaty on the domestic level and to enact the necessary legislation to give domestic effect to that treaty. [Arts.2 (1) (b), 14 (1) and 16, Vienna Convention on the Law of Treaties 1969].

[139] The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is a multi-criteria decision analysis method, which was originally developed in 1981 with further developments in 1987 and in 1993. TOPSIS is based on the concept that the chosen alternative should have the shortest geometric distance from the positive ideal solution (PIS) and the longest geometric distance from the negative ideal solution (NIS).

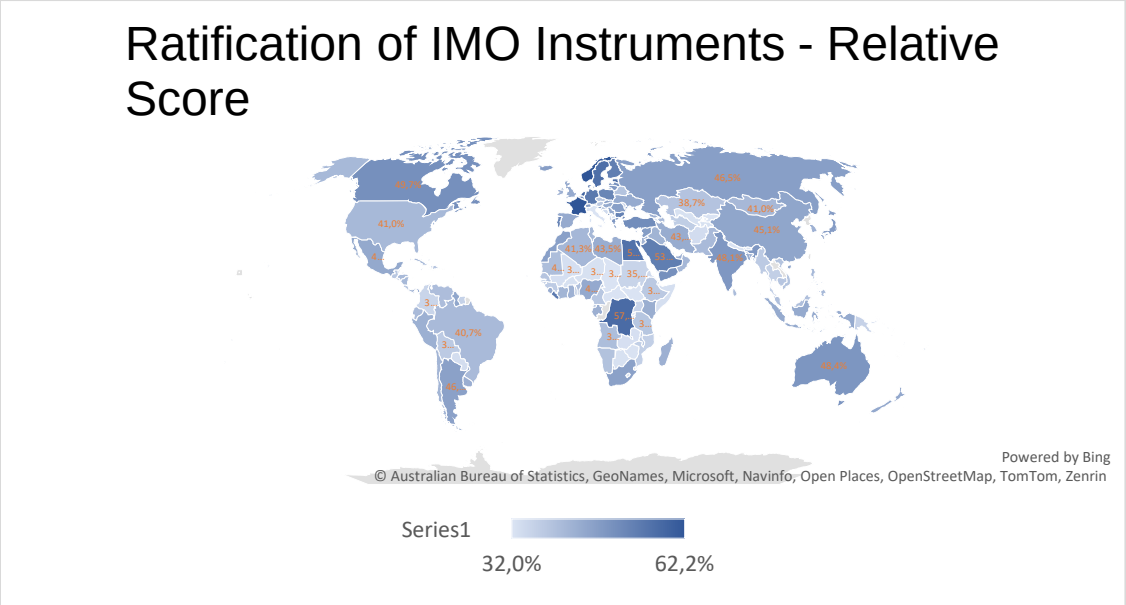
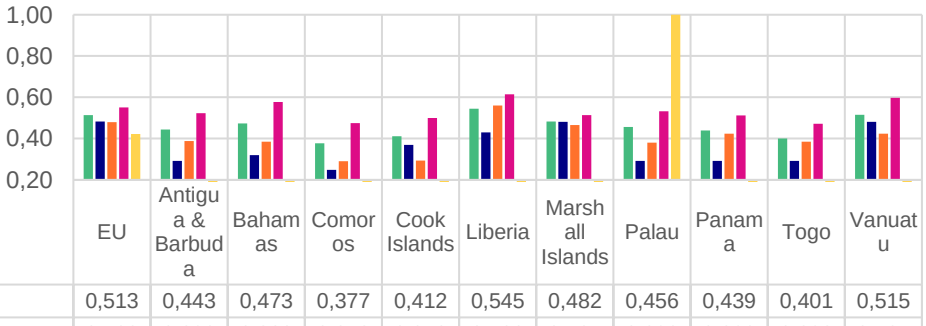


Figure 32: Level of ratification – global picture[140]

Figure 33 breaks the IMO instruments into four policy groups — safety and security, environmental protection, human element, and legal liability — it is possible to estimate the ratification index for each state in the aforementioned policy fields. Comparing the EU and selected FOC, the results of EU Member States are, on average, very high, as is Liberia's score.



	EU	Antigua & Barbuda	Bahamas	Comoros	Cook Islands	Liberia	Marshall Islands	Palau	Panama	Togo	Vanuatu
total	0,513	0,443	0,473	0,377	0,412	0,545	0,482	0,456	0,439	0,401	0,515
Safety	0,482	0,293	0,320	0,248	0,370	0,430	0,481	0,293	0,293	0,293	0,481
Environmental Protection	0,480	0,389	0,386	0,290	0,293	0,560	0,465	0,380	0,424	0,386	0,424
Legal	0,551	0,524	0,577	0,475	0,500	0,615	0,514	0,532	0,512	0,471	0,598
Human Element	0,422	0,133	0,133	0,133	0,133	0,133	0,133	1,000	0,133	0,133	0,133

Figure 33: Performance per category of policies for selected States - Indices of Regulatory Compliance

By contrast, all other FOC scores are lower than the EU's in all segments.

In terms of safety, the EU Member States score the maximum value, while most of the OR outside the EU are below the European average. The scores for such OR are better in the fields of environmental protection and legal, especially for

[140] Source: Own elaboration of IMO data.

Liberia, the Marshall Islands and Panama. Liberia and the Marshall Islands also score highly in safety. This can be explained by the fact that these registers attract many tankers, and charterers seek high-quality tonnage, adhering to strict regulations to mitigate risks and limit their liabilities associated with oil transport.

The above approach could not be applied to the ILO instruments, as there is no table consolidating the chapters of the MLC ratified by the States. It was, however, possible to draw a broad picture utilising data from the ILO (Figure 34). An in-depth analysis was undertaken of 35 of the registers classified as FOC by ITF.

All the selected States were found to have ratified most of the fundamental ILO conventions. FOC with a significant commercial footprint, such as those in Antigua, Bahamas and Panama, have ratified all parts of the MLC. Other registers have ratified only some parts of the MLC.

Figure 34: The ILO ratification Index[141]

Among the selected FOC, the ILO Promotional Framework for Occupational Safety and Health (C187) has been ratified by the Republic of Moldova (2010) and by São Tomé and Príncipe (2024), out of a total of 73 ratifying States. The Forced Labour Convention has been ratified by all investigated States, but the Protocol on Forced Labour by none yet. The minimum age is regulated with ratification of the Minimum Age (C138)[142] by all selected States, but in the majority of the States, the minimum age standards are lower than those set by the MLC.

[141] Source: Processed data from ILO.

[142] The C138 - Minimum Age Convention, 1973 (No. 138) is an international labour convention that aims to effectively abolish child labour by setting a minimum age for admission to

ILO data does not support further extraction of reliable results based on ILO ratification data. Nevertheless, the supervisory body of the International Labour Organisation, the Committee of Experts on the Application of Conventions and Recommendations (CEACR)[143], provides detailed comments on the implementation of the convention's requirements. The analysis of CEACR comments on the 19 MLC ratifying FOC reveals the current implications for the application of MLC labour standards and working conditions.

The identified common gaps found among FOC are summarised in Table 12 below. Detailed analysis is provided in Annex 11.3. There are no comments from CEACR concerning the application of the MLC in 7 ratifying states (i.e. Cook Islands, Gabon, Lebanon, St. Vincent and the Grenadines, San Marino, Sierra Leone, and Tanzania (Zanzibar).

Articles of the MLC Convention	Foundational issues with MLC implementation are found, including a lack of harmonisation or existence of national legislation, inconsistencies in applicable provisions, and specific exclusions from the definition of "seafarer" that limit the Convention's scope. It also points out the absence of regulated respect for fundamental rights and a lack of required consultations with shipowner and seafarer organisations.
Title 1. Minimum Requirements for Seafarers to Work on a Ship	Deficiencies found related to the minimum age for seafarers (e.g., lack of prohibited work lists, broad exemptions for night work) and medical certificates (e.g., exemptions for pre-work examinations, issues with appeal rights, and other). Also, extensive problems with Recruitment and Placement Services (RPS) are revealed, such as the absence of licensing regulations, lack of insurance to protect seafarers, and gaps in national protection.
Title 2. Conditions of Employment	Widespread issues with Seafarers' Employment Agreements (SEA) are revealed, including their general ineffectiveness, slow implementation of piracy-related amendments, unclarity on wage continuation during captivity, and lack of opportunities for seafarers to review agreements. Problems with wage payment are also identified (e.g., varying intervals, missing exchange rate info), hours of work and rest (e.g., unauthorised exceptions, non-application to all seafarers), annual leave (e.g., faulty calculation methods, non-compliance with maximum continuous service), repatriation (e.g., limited financial security, confusion on maximum service periods), and seafarer compensation (e.g., limited circumstances for unemployment compensation). Additionally, issues with manning levels (e.g., specific ship exclusions, confusion on cook requirements) and rare instances of no policies on career development are noted.
Title 3. Accommodation, Recreational Facilities, Food and Catering	Gaps are identified in ensuring adequate accommodation and recreational facilities (e.g., lack of government information, prohibited exceptions, insufficient national legislation for minimum requirements) and issues with food and catering (e.g., inadequate consideration of cultural/religious backgrounds, exemptions for qualified cooks, and lack of provisions for training, inspection, and the prohibition of minors as cooks).

employment, generally 15 years, with provisions for light work and hazardous work. It has been incorporated in the MLC2006. For additional information about C183 see: https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:11300:0::NO:11300:P11300_INSTRUMENT_ID:312283:NO

[143] The Committee of Experts on the Application of Conventions and Recommendations (CEACR), is the supervisory body of the ILO responsible for examining the application of international labour standards by (ILO) member states.

Title 4. Health Protection, Medical Care, Welfare and Social Security Protection	Significant deficiencies were found in medical care (e.g., non-existent or limited facilities, missing information on free medical advice, exemptions for ship's doctors on Mobile Offshore Drilling Units-MODU),[144] and comprehensive issues with shipowners' liability for sickness and injury (e.g., exclusions, limitations, inadequate financial security, lack of notification systems). Also, insufficient legislative measures are pointed out for health and safety, lack of reporting/investigation mechanisms for accidents, and absence of statistical data. Furthermore, the absence or inadequacy of shore-based welfare facilities is highlighted, along with gaps in social security coverage for non-resident seafarers, limited benefits, and a general lack of government information on implementation.
Title 5. Compliance and Enforcement	Systemic issues are found in how flag States and port States ensure compliance. For flag States, problems with MLC documentation (DMLC Part I) are identified, along with missing or incomplete information on delegated inspection functions to Recognised Organisations (RO), lack of inspector qualifications, and absence of provisions for inquiries into serious maritime casualties or handling onboard complaints. For port States, a general lack of national legislation for enforcement is highlighted, absence of established onshore complaint procedures, and limited or untrained inspectors.

Table 12: Identified common gaps in MLC implementation found across FOC[145]

In the area of fisheries, two major agreements under the Food and Agriculture Organisation (FAO) govern the role of flag and port States in combating IUU fishing.

The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas ("FAO Compliance Agreement") requires States to ensure that vessels flying their flag comply with internationally agreed conservation and management measures for high seas fisheries. It establishes responsibilities for flag states to authorise and monitor the activities of their fishing vessels, maintain detailed records, and take action against vessels that violate the rules. The agreement is a key instrument in strengthening global fisheries governance and supporting the sustainable use of marine resources. Currently, 45 States, including those of the EU, have ratified the Convention; however, states with substantial activity and interest in fisheries, such as Japan, China, and Russia, are not yet Parties. The same is true for Panama, Liberia, and the Marshall Islands, three of the largest FOC, which have not ratified the Agreement.[146]

[144] A Mobile Offshore Drilling Unit (MODU) is a type of vessel designed for exploratory offshore drilling of new oil and gas wells or, in some cases, for scientific drilling. MODUs are typically movable (self-propelled or towable) and can include semi-submersibles, jack-up rigs, drillships, or submersibles, allowing them to operate in various water depths.

[145] Processed data from ILO NORMLEC CEACR Comments :Last accessed 03 August 2024

[146] FAO Treaties database available at: Status by Participant | FAO Treaties Database | Food and Agriculture Organization of the United Nations

The Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing – (PSMA)[147] is the first binding international treaty focusing on combating IUU fishing through port State controls. It aims to block illegally caught fish from entering international markets by requiring port States to inspect foreign vessels and deny port entry or use to those involved in IUU activities. This instrument is ratified by 84 States and has been in force since 2016. Many FOC are parties to the convention, such as Saint Kitts and Nevis, Saint Vincent and the Grenadines, Togo, and Bahamas.

5.2. Policies and legal regimes, or lack thereof, among selected open registers

The analysis of the policies and legal regimes for a set of open registers is presented in Annex section 11, covering both OR run by public authorities (Bahamas, Belize, Bermuda, Comoros, Palau, Panama) and OR run by private entities (Cameroon, Cook Islands, Liberia, Marshall Islands, St. Kitts and Nevis, Togo, Vanuatu). These registers are selected because data is available, unlike others where relevant information is not publicly disclosed.

- The overarching conclusion is that these States allow foreign ownership and registration of vessels. When reviewing key aspects, the following stand out:
- Nationality requirements: registration is available to foreign individuals and corporations, not just nationals of the registering country in all thirteen registers.
- Beneficial ownership: There are variations in requirements relating to ownership transparency. For the majority, there are no requirements on ultimate beneficial ownership. Panama has recently implemented a beneficial ownership register, but access to it is restricted. Others, like Bermuda, require ownership declarations and empower authorities to investigate. Comparatively, only in Saint Kitts and Nevis applies a stricter ownership transparency requirement (declaration of beneficial interests).
- Technical requirements for the vessel: Most have minimum tonnage requirements, except Panama. Age restrictions vary, with some rejecting vessels older than 30 years, but bareboat registration (dual registration) is permitted in all States. There are lax age requirements in Liberia and the Marshall Islands (up to 20 years with waivers for older ships).

[147] Port State Measures Agreement (PSMA) refers to the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, adopted by the FAO in 2009 and entered into force in 2016. It is the first binding international treaty to specifically target IUU fishing by setting minimum standards for port inspections of foreign-flagged fishing vessels and denying port access or services to those engaged in such activities.

- Fees: Most States charge annual tonnage fees for registration and have separate fees for endorsements and other services (see Annex section 12 for an analysis of STCW Certificates of Competence (CoC) Endorsements system).
- Ratification of international agreements: All OR used as FOC claim adherence to international conventions concerning safety, marine pollution and labour. Even Saint Kitts and Nevis claims to enforce safety and environmental regulations despite not ratifying key international conventions. Bermuda emphasises strong oversight during registration and requires inspections.
- Enforcement: The Saint Kitts and Nevis registry lacks precise mechanisms for ongoing monitoring of registered ships. Liberia and the Marshall Islands rely heavily on classification societies for inspections, potentially leading to inconsistent enforcement. They all rely on inspections by the PSCI authorities of the foreign ports visited by their registered vessels, and on classification societies to ensure compliance with international regulations. In all three, there is no strong emphasis on crew welfare regulations. Overall, this could lead to inconsistent enforcement and create gaps, especially for vessels operating outside the registering States' waters.

5.3. Revenue from open registers run by private entities

The availability of financial data on the operations of OR used as FOC is limited and opaque. Several factors explain this.

Many countries that operate OR used as FOC apply lax reporting requirements and offer confidentiality to shipowners. Consequently, registers may not require full disclosure of revenues, expenses or ownership structures. In addition, shipowners using such registers often structure their operations through complex corporate arrangements, including the use of shell companies and offshore accounts.[148] These structures are designed to minimise tax liability and regulatory scrutiny, further complicating efforts to obtain financial information. Even when financial information is available, it may not be standardised and may be subject to less scrutiny than in more regulated jurisdictions. This inconsistency can make it difficult to compare data across registers or to assess companies' overall financial health. In addition, unlike publicly traded companies, which are required to disclose financial information to regulators and shareholders, the operations of OR used as FOC are often private, with little obligation to make financial data publicly available.

The operation of the open registry requires an agreement with the administration (flag State), in which tasks, benefits, and procedures are agreed. This agreement

[148] "Offshore accounts" generally refer to bank or investment accounts held outside the account holder's country of residence, often in jurisdictions that provide financial secrecy, favorable tax treatment, or regulatory advantages.

is subject to the IMO Code for Recognised Organisations (RO)[149]; yet it is not publicly available. In many cases, the governing law of the agreement protects the economic interests involved with the right of anonymity.

Overall, financial data from the operations of open registers around the globe is often sparse, fragmented and difficult to access. This makes it difficult for stakeholders, including regulators, environmentalists and researchers, to understand the financial implications of these practices fully.

To address this issue, a financial model estimating revenues from the registration of ships and certification of mariners was developed. A description of the model is available in Annex section 16. Notably, the analysis does not include revenues from the demolition of ships (last voyage registration) due to the complete lack of credible data.

The results (Table 13) suggest that the total market amounts to around US$ 120 million, with almost US$ 93 million (80%) being attributable to registration fees. The top-5 FOC, namely Panama, Liberia, Marshall Islands, Bahamas and Bermuda, account for approximately 41% of the total registration fees, i.e. US$ 38 million collected. Notably, these five registers get the lion's share in registering new ships (based on the registration data in GT). The same is expected for the certification of mariners. When considering the weak genuine link to these States, one could imply that this sum is the lost revenue for national registers.

	2020	Top-5 %	2021	Top-5 %	2022	Top-5 %	2023	Top-5 %	2024	Top-5 %
Registration	4.56	33%	3.38	43%	2.41	53%	3.32	60%	2.97	88%
Annual (ships)	84.03	40%	86.59	40%	88.39	40%	90.86	40%	93.00	41%
ROs	48.57	17%	1.51	15%	1.01	19%	1.33	22%	0.94	42%
Endorsements	5.03	11%	13.67	12%	14.69	14%	21.72	15%	19.71	20%
Total	142.23	31%	105.20	36%	106.60	36%	117.34	36%	116.78	39%

Table 13: Summary of the financial impact of FOC (in US$ M)

The total revenues of the registers constitute an interesting business case for private interests. When looking at the revenues for the flag States, however, the interest appears more limited in terms of national accounts. The estimated revenues from ship registers highlight differing economic significance among the top five OR. While the Marshall Islands derive an estimated 3.83% of their GDP from registry activities, indicating moderate significance, other jurisdictions rely far less on these revenues: Liberia (0.25%), the Bahamas (0.028%), Panama

[149] The IMO Code for Recognized Organizations (RO), specifically MSC.349(92) and MEPC.237(65), establishes a standardized framework for the oversight and evaluation of organizations authorised by flag states to conduct statutory surveys and certifications on their behalf. In essence, the IMO Code for RO is a critical instrument in ensuring that ships are safely and environmentally sound, and that the organisations responsible for verifying this are held to a high standard.

(0.026%), and Bermuda (0.005%). These figures suggest that, despite the ship registry's importance, it is not a critical revenue source for most States.

Additionally, a portion of these revenues is shared with private entities that manage or facilitate the registers, further diluting the overall fiscal impact on State budgets. It can be assumed that the core interests of these States lie in other areas.

Their primary interest is in maintaining a strong presence in the global ship registration market, as seen in the cases of Liberia, the Marshal Islands, and Bermuda, as well as benefiting from the relationship with private entities that generate revenues from the operation of the registry. This is especially the case in the cruise industry, where the operation of the registry also serves national and local interests in tourism (as in the case of the registers of Bermuda and the Bahamas). The Bahamas, for example, has an interest in both registration and tourism.[150] In fisheries, countries like Vanuatu, Belize, and Panama benefit from registering large fleets of DWF vessels, deriving income not only from registration but also from other services, bunkering, and transhipment activities.[151] Panama also leverages the Canal to reinforce its maritime prominence.[152] Even land-poor states like Liberia and the Marshall Islands generate income by outsourcing registry operations to private firms abroad.[153]

6. Case studies

6.1. Assessment methodology

Case studies are commonly used in academia and business to educate and support arguments with real examples. The approach in this report follows basic research principles and is based on qualitative analysis; the cases are descriptive [154] in nature. Methodologically, a case study is a qualitative research design that explores an event, activity or individual in depth. It has clear boundaries, and researchers use multiple data collection methods over time to gain detailed insights.

[150] Alderton, T., & Winchester, N. (2002). Globalisation and de-regulation in the maritime industry. *Marine Policy*, 26(1), 35–43 https://doi.org/10.1016/S0308-597X(01)00034-3

[151] Campling, L., Havice, E., & Howard, P. (2012). The Political Economy and Ecology of Capture Fisheries. *Journal of Agrarian Change*, 12(2-3), 177–203 https://doi.org/10.1111/j.1471-0366.2011.00356.x

[152] Rodrigue, J-P., & Notteboom, T. (2015). *The Geography of Transport Systems*. Routledge https://doi.org/10.4324/9781315618159

[153] Martínez Gutiérrez, N. A. (2013). Limitation of Liability in International Maritime Conventions. Routledge, https://doi.org/10.4324/9780203834039

[154] De Vaus, D. (2001). Research design in social research. SAGE Publications, p. 220. https://doi.org/10.4135/9781446263495

The most widely used criteria[155] are the following:

1. Market share of frequency in statistics
2. Alleged association with poor performance or potentially illegal activity
3. Policy Impact, and especially looking for attributes with common and/or cumulative impact in more than one sector
4. Potential to mitigate risks and negative implications or effects.

The selection methodology for assessing case studies of FOC is grounded in a set of clearly defined criteria designed to capture the most relevant aspects of registry operations and their policy implications. These criteria were chosen to reflect both the operational realities of the shipping industry and the broader regulatory, environmental, and economic impacts of FOC usage. The methodology applies general and study-specific criteria to identify jurisdictions where the interplay of FOC practices and policy challenges is most pronounced. In particular, it focuses on countries and regions that significantly influence EU policy interests, show consistent patterns of non-compliance, or remain under-investigated despite known governance issues.

The application of these criteria to the study is summarised in Table 14 and further detailed in Annex section 13.

- **Market Share / Frequency:** Evaluates the registry's market power, visibility in global maritime governance (e.g. IMO, ILO), and its influence on competition and operational efficiency. A larger market share is often associated with both greater policy impact and potential regulatory distortion.
- **Illegal Activity / Performance:** Assesses the extent of a registry's association with non-compliance, including poor PSC records, involvement in activities such as illegal fishing or ship abandonment, and overall enforcement weaknesses.
- **Policy Impact:** Measures the tangible effects of maritime policies implemented under a given registry, including social, economic, and environmental outcomes. This criterion also supports adaptive policymaking by identifying unintended consequences or areas for improvement.
- **Mitigation Potential:** Focuses on the alignment of registry practices with global sustainability goals, especially in terms of emissions reduction, environmental protection, and long-term risk mitigation. It also emphasises the cost-effectiveness of policies in achieving environmental benefits.

Table 14: Case study selection criterion

In applying these criteria, the study prioritises jurisdictions with high market dominance and influence on compliance-related issues (e.g., tax evasion,

[155] The selected criteria follow the spirit of the analysis of the books of Stone, D. (2012). *Policy Paradox: The Art of Political Decision Making* (3rd ed.). W.W. Norton & Company. ISBN 9780393912722 and Weimer, D. L., & Vining, A. R. (2017). *Policy Analysis: Concepts and Practice* (6th ed.). Routledge. ISBN 9781138216518. https://doi.org/10.4324/9781315442129 Both books are widely used in public policy analysis courses and provide a critical perspective on how policy decisions are made, incorporating political dynamics, competing values, and the complexity of real-world policymaking.

sanctions avoidance), regions with clusters of countries exhibiting policy failures across multiple sectors (such as fisheries, labour, or shipbreaking), and jurisdictions with persistent implementation gaps or links to opaque maritime practices (e.g., ghost fleets[156]). Countries with very low or zero corporate income tax rates were also considered, as they are relevant in enabling regulatory arbitrage.[157] This methodology emphasises the interconnected nature of the issues, recognising that problems in one domain often affect multiple policy areas. This results in the identification of five FOC that frequently appear across the different problem areas presented in Section 2 – Comoros, Liberia, Marshall Islands, Panama, and Vanuatu. Information on the ratification status of major conventions by the above FOC, and a more detailed explanation of the case study selection criteria is included in the Annex, section 13.

6.2. Comoros

Comoros operates as a widely recognised FOC, with its ship registry managed by the Administration as well as by private agents based outside the Comoros. Despite lacking a maritime-oriented economy, the country uses its registry as a low-cost revenue stream, appealing to foreign shipowners due to minimal regulatory oversight. The Comorian economy is not maritime-oriented. Comoros has limited port infrastructure, with Port de Moroni (on Grande Comore) being the primary seaport. The World Bank notes severe infrastructure limitations, including shallow ports, outdated equipment and limited dredging, restricting the entry of larger cargo vessels. The Comoros-flagged fleet is relatively modest in size (Table 15)[158], yet it has attracted considerable attention due to its challenging reputation:

- It mainly consists of bulk carriers and general cargo ships, most of them older than 20 years.
- The registered tonnage is primarily held by foreign beneficial owners, with little oversight or engagement from the flag State.

[156] The term *ghost fleet* usually refers to inactive, laid-up, or derelict vessels. The term *shadow fleet*, where used, refers to vessels that are active and trading, often used to evade sanctions, insurance rules, or other regulatory controls. A primary source is found at : Caprile, Anna, and Gabija Leclerc. 2024. Russia's "shadow fleet": Bringing the threat to light. EPRS Briefing PE 766.242. Brussels: European Parliamentary Research Service, November 2024. https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/766242/EPRS_BRI%282024%29766242_EN.pdf

[157] Regulatory arbitrage refers to the practice of exploiting differences, gaps, or inconsistencies between regulatory frameworks across jurisdictions or financial instruments in order to reduce compliance costs, avoid restrictions, or gain a competitive advantage. It often involves structuring activities or transactions to fall within the least burdensome regulatory regime, without altering the underlying economic substance.

[158] Main UN Trade and Development (UNCTAD) website – Maritime Profile: Comoros https://unctadstat.unctad.org/CountryProfile/MaritimeProfile/en-GB/174/index.html

Ship registration fees and related services are a source of foreign revenue for the Comorian government, but official data on the contribution to GDP is scarce. Given the limited domestic industry, high poverty, and a GDP per capita of roughly US$1,400,[159] registry fees provide an opportunistic revenue stream with low administrative burden. However, the long-term reputational damage and international scrutiny undermine credibility and restrict international partnerships in the maritime sector.

The Comoros flag is frequently used by vessels seeking to avoid sanctions, regulatory enforcement, or ship recycling laws. A Windward Maritime AI analysis (2025) reveals that the EU and UK specifically sanctioned Comoros' ship registry operator for facilitating shadow-fleet activities, including flag-hopping and opaque vessel ownership, with 132 Comoros-flagged vessels currently under Western sanctions.[160]

Table 15 indicates the growth of the Comoros fleet.

Comoros	2019	2020	2021	2022	2023	2024
Percentage of global fleet value	0.02	0.08	0.03	0.03	0.03	0.03
Number of ships	212	234	244	252	274	291
Gross Tonnage	813	1,475	1,121	1,169	1,270	1,314
Dead weight tons in thousands	1,110	1,880	1,488	1,506	1,804	1,893
Percentage of total world	0.056	0.091	0.07	0.068	0.079	0.08
Average age of vessels (years)	35	34	35	35	36	36

Table 15: Analysis of the Comoros fleet[161]

i) Implementation of core international instruments

Comoros scores 0.377 on the ratification index developed for this study (Figure 33).[162] It is worth noting that the EU average is 0.514. The score is close to the lowest tier of 0.372, signalling a low commitment to international standards and policies. Besides the necessary instruments, such as SOLAS, MARPOL, and STCW, other legal and sectoral-focused instruments, such as the London

[159] World Bank. (2023). GDP per capita (current US$) – Comoros. World Development Indicators. Retrieved June 2025, from World Bank database: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=KM

[160] Windward. (2025, July 23). Unprecedented maritime compliance challenges emerge from EU's 18th sanctions package. Windward AI. Retrieved August 18, 2025, from https://windward.ai/blog/eus-18th-sanctions-package-the-new-maritime-reality

[161] Source: UNCTAD.

[162] The development of a ratification index is detailed in Section 11 of the Annex. To estimate this degree of ratification, the widely applied multi-criteria decision-support methodology TOPSIS215 was selected. In this case, the criteria determining the degree of ratification are the instruments. For every ratified instrument, the Member State scores a '1', while for every non-ratified instrument, the score is '0'. Instruments that have been denounced are marked with a '-1'. Every criterion, i.e., every instrument, receives the same weight. This index should not be confused with the PSC performance of the registry.

Convention,[163] STCW-F,[164] and Hong Kong Convention (HKC),[165] have not yet been ratified. Although formally party to key IMO instruments such as the SOLAS, STCW and MARPOL conventions, its domestic implementation and compliance mechanisms remain inadequate.

This is reflected in the fact that the Comoros flag has consistently performed poorly under international PSC regimes.

- Under the Paris MoU (2023), Comoros remains listed as a “black flag”, indicating a high-risk flag with significantly above-average detention ratios. In the 2020–2022 period, Comoros-flagged vessels had a detention rate of 19.2%, among the highest globally. The flag has been subject to targeted inspections due to frequent violations concerning safety equipment, manning, pollution prevention, and ISM (International Safety Management) code compliance.
- The Tokyo MoU also lists Comoros as a very high-risk flag, noting its extremely poor compliance performance. Between 2021 and 2023, vessels under the Comorian flag experienced high detention and deficiency rates due to substandard ship conditions, crew welfare issues, and non-compliance with MARPOL and SOLAS regulations.

These records indicate systemic regulatory failures, a lack of effective flag state control, and minimal engagement in enforcement follow-ups.

Although Comoros is not an EU Member State and does not fall under EMSA's direct regulatory framework, EMSA tracks detentions and non-compliance issues associated with third-country flags operating within EU ports. EMSA data provided in earlier project phases highlighted Comoros as one of the most frequently detained flags in European waters. In EMSA’s Annual Overview of Marine Casualties and Incidents, Comoros-flagged vessels have been repeatedly linked with pollution events, loss of propulsion, and fatalities, highlighting the unseaworthiness and operational risks associated with ships under this flag.

[163] The London Convention (formally the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter) is an international treaty adopted under the International Maritime Organization (IMO) to regulate the deliberate disposal of waste at sea. It bans the dumping of certain hazardous substances and subjects other materials to a permit system, with the overall aim of protecting the marine environment. The Convention was among the first global agreements to address marine pollution from dumping and has since been progressively replaced by the 1996 London Protocol, which introduces a more precautionary and comprehensive approach.

[164] STCW-F refers to the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (1995), which sets minimum competency and safety standards for crews serving on seagoing fishing vessels.

[165] The Hong Kong International Convention for the safe and environmentally sound recycling of ships, or Hong Kong Convention (HKC), is a multilateral convention adopted in 2009, which entered into force on June 26, 2025.

EMSA reports also often cite the use of flags like Comoros in the final stages of ship life, which correlates with end-of-life transfer for demolition, often without complying with the EU Ship Recycling Regulation (EU SRR)[166] or the HKC.

ii) Registration terms and fees

There is limited public access to a comprehensive maritime act governing ship registration in the Comoros.[167] Available evidence indicates no vigorous enforcement of a "genuine link" between the shipowner and the flag state, as Article 91 of UNCLOS requires. The Comoros Ship Registry allows ownership, control and operations to be entirely foreign, weakening the state's ability to exert jurisdiction and control over its flagged fleet. Besides the Administration, it appears that private entities have the right to register ships; however, this could not be cross-checked or validated.[168] The relation with the administration appears profit-oriented and loosely supervised by the State. This model has contributed to the rapid expansion of the registry's fleet but has also drawn international criticism, as non-regulated entities reportedly act as intermediaries in the marketing and administration of the registry, a pattern seen in other FOC.

There is little to no visibility on UBO protections or disclosures in the registration process. This lack of transparency opens the door to the use of the flag for illicit purposes, including sanctions evasion and money laundering, as flagged by investigative reports.[169]

The rights and powers of the registry are not clearly defined in international or regional legal repositories, which suggests either outdated or minimal legislation governing the registry's oversight and enforcement functions.

Detailed fee structures for Comoros flag registration are not readily published on official platforms. However, secondary sources[170] and registration service providers suggest that the Comoros registry attracts business through low-cost registration fees, minimal renewal obligations and a simplified application process, that often requires limited documentation.

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[166] Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC Text with EEA relevance ; https://eurlex.europa.eu/eli/reg/2013/1257/oj/eng

[167] This is expianed in more detail in Annex section 11.4.1.4

[168] The official website of the administration https://comorosmaritime.org/ is practically inactive since early 2025. The website https://www.comorosshipping.com/index.php accessed June 20, 2025, that guided users to a private entity in India, was in August 2025 not available; hence it was not possible to cross-check the validity of any information related to the genuine link and registration procedures.

[169] Comoros' measures to combat money laundering and terrorist financing available at: https://www.fatf-gafi.org/en/publications/Mutualevaluations/comoros-mer-2024.html

[170] Secondary-market specialist sources indicate that the Comoros registry is positioned competitively — citing quick registration times, flexible ownership/crew criteria and competitive rates (see Flagadmin: https://flagadmin.com/en/registration/komori) — though official fee schedules are not widely published in the public domain.

Estimating revenue from the ship registry is challenging due to the lack of public financial transparency. However, indirect estimates suggest that ship registration constitutes a meaningful revenue stream for the Comorian state, particularly due to the absence of a large industrial or maritime base.[171]

Given the registry's fleet size (over 200–300 ocean-going vessels at various times), and an estimated average registration/maintenance fee of US$2,000–5,000 per vessel annually, total annual earnings could range between US$500,000 to US$1.5 M, possibly more with ancillary services (e.g. certifications, inspections, renewal services). However, most of this income likely remains with the private registry operators, with only a portion remitted to the Comorian government under undisclosed agreements.

iii) Safety and Labour

Labour protections are deficient. The Comoros is not a party to the Maritime Labour Convention (MLC, 2006) and lacks formal grievance mechanisms or institutional frameworks to uphold seafarers' rights. Repeated incidents involving seafarer abandonment, wage non-payment, and unsafe working conditions have been recorded on Comorian-flagged ships (ITF, 2023; ILO, 2023). The flag is increasingly regarded as a registry of last resort for shipowners seeking to circumvent international labour standards.

iv) Environmental Protection

Environmental compliance under the Comorian flag is mainly symbolic. Although Comoros has ratified parts of MARPOL, enforcement is weak. Vessels flagged to Comoros have been implicated in breaches of MARPOL Annex I and V, including oil dumping, falsified oil record books, and lack of pollution prevention systems (FAO, 2023). There is no evidence of any domestic maritime environmental authority actively monitoring or enforcing environmental obligations.

Ship recycling practices under the Comorian flag further highlight environmental shortcomings. Comoros is not a party to HKC. Vessels flying its flag going for dismantling fall out of the scope of the EU SRR. A notable number of end-of-life vessels are flagged under Comoros shortly before scrapping, usually in South Asian yards known for poor environmental and labour standards. This practice, referred to as "last voyage flagging," facilitates the circumvention by shipowners

[171] The Union of Comoros: Country Economic Memorandum – Boosting Growth for Greater Opportunities (Sept 2023): "With modest domestic revenue mobilization, the country could strengthen the capacity of the customs and tax administrations, reduce tax expenditures, broaden the tax base, facilitate tax compliance…" (Page 20)
https://documents1.worldbank.org/curated/en/099092623142523619/pdf/P1793290f8d00b0eb08f3505e4cad6f4193.pdf

of stringent regulatory frameworks, such as the EU SRR or the Basel Convention.[172]

v) Fisheries

Comoros-flagged vessels have repeatedly been associated with IUU fishing in West African and Indian Ocean waters. The country lacks effective Monitoring, Control, and Surveillance (MCS) systems,[173] vessel monitoring systems (VMS)[174] and port inspections, undermining international fisheries governance regimes, despite Comoros being a party to instruments such as UNCLOS and the PSMA.[175] In October 2015, the European Commission issued a yellow card to Comoros due to its failure to combat IUU fishing, particularly under its Fisheries Partnership Agreement.[176] [177] Subsequently, Comoros was identified by the European Commission with a red card and listed by the Council of the EU as a non-cooperating third country in the fight against IUU fishing.

vi) Taxation and Market Fairness

The Comorian ship registry imposes minimal financial obligations, thereby contributing to distortions in fair competition within the maritime sector. By offering low registration fees and minimal oversight, it attracts older vessels and foreign owners seeking to avoid stricter controls from their flag state.[178] This regulatory

[172] The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, adopted in 1989 under the auspices of the United Nations Environment Programme (UNEP) and entering into force in 1992, is an international treaty aimed at reducing the movement of hazardous wastes across borders. It seeks to prevent transfer of such waste from developed to less developed countries, ensure environmentally sound management and disposal, and establish a system of prior informed consent before shipments can take place.

[173] Monitoring, Control, and Surveillance (MCS) systems refer to the comprehensive framework of tools, procedures, and institutions used to ensure compliance with fisheries management regulations. They include the collection of catch and effort data (monitoring), the establishment of rules and management measures (control), and the enforcement of those measures through inspections, patrols, and sanctions (surveillance).

[174] Vessel Monitoring Systems (VMS) are satellite-based technologies that automatically transmit the location, speed, and course of fishing vessels at regular intervals to fisheries authorities. VMS is a core component of MCS frameworks, providing near real-time information that supports enforcement, fleet management, and the detection of illegal, unreported, and unregulated (IUU) fishing activities

[175] Environmental Justice Foundation (2024), Evaluating Fisheries Transparency (SWIO), Section on Comoros. https://ejfoundation.org/resources/downloads/Transparency-SWIO-report-2024.pdf

[176] European Parliament. (2017). *The EU's fight against illegal, unreported and unregulated (IUU) fishing*. European Parliamentary Research Service, At a Glance, PE 614.599. Retrieved from https://www.europarl.europa.eu/RegData/etudes/ATAG/2017/614599/EPRS_ATA(2017)614599_EN.pdf

[177] IUU Watch. (n.d.). *EU carding decisions* - Map of EU carding decisions since the EU IUU Regulation entered into force. Available at: https://www.iuuwatch.eu/the-iuu-regulation/eu-carding-decisions/

[178] Alderton, T., & Winchester, N. (2002). Globalisation and de-regulation in the maritime industry. *Marine Policy*, 26(1), 35–43. https://doi.org/10.1016/S0308-597X(01)00034-3

leniency distorts market competition, allowing substandard ships to operate at lower costs, undermining compliant registers. As a result, Comoros exemplifies how open registers can externalise safety and labour risks while generating revenue with limited domestic benefit.

The lack of financial transparency in the Comorian registry further exacerbates the problem. The use of shell companies and the absence of requirements for UBO disclosure enable shipowners to operate anonymously, increasing the risk of financial crimes, including tax evasion and money laundering (Transparency International, 2022; IMF, 2010, p. 23).[179]

vii) Security and Supply Chains

The Comorian flag is increasingly associated with maritime security risks, particularly concerning sanctions evasion and the operations of shadow fleets. Investigations conducted by the United Nations, and various international NGO have documented the involvement of Comoros-flagged vessels in the illicit transport of sanctioned commodities, including Iranian oil, Syrian crude, and goods originating from North Korea.[180] These vessels often engage in unauthorised ship-to-ship transfers, AIS manipulation, and class hopping[181] to obscure their activities.

viii) Conclusion

Taken together, the deficiencies in the Comorian maritime regime span across regulatory, environmental, economic and security dimensions. Despite formal ratifications of some international maritime instruments, practical enforcement remains severely deficient due to Comoros flag being linked to poor ship maintenance, unsafe operations, and weak labour protections. Safety and environmental compliance under international conventions such as SOLAS,

[179] International Monetary Fund. (2010). *Union of the Comoros: Selected Issues and Statistical Appendix* (p. 23). Retrieved from https://www.imf.org/external/pubs/ft/scr/2010/cr10320.pdf

[180] United Nations Security Council, Report of the Panel of Experts established pursuant to resolution 1874 (2009), S/2023/171, 7 March 2023; Midterm report of the Panel of Experts established pursuant to resolution 1874 (2009), S/2023/656, 12 September 2023. See also earlier Panel reports citing Comoros-flagged vessels: S/2019/691 (26 July 2019), Annex, and S/2022/132 (1 March 2022), Annex; U.S. Department of the Treasury, Office of Foreign Assets Control (OFAC), "Treasury Targets Large Iranian Military Financial Facilitator and Senior IRGC Official," Press Release, 29 November 2023; OFAC, "Treasury Targets Maritime Companies Transporting Iranian Oil," Press Release, 4 April 2024 (designating Comoros-flagged vessels Anthea, Boreas, Hecate, Cape Gas, Glaucus, Oceanus Gas, Hebe); Center for Advanced Defense Studies (C4ADS), Case Study: LPG shipments to Syria by Comoros-flagged tanker Happy, 2022; see also TankerTrackers OSINT reports on Comoros-flagged Suezmax Savior discharging at Baniyas, Syria (2021–2023).

[181] See International Transport Workers' Federation (ITF), Flags of Convenience and Classification Societies: Risks and Loopholes in Maritime Governance (London: ITF, 2020); United Nations Security Council, Report of the Panel of Experts established pursuant to resolution 1874 (2009), S/2021/211, 4 March 2021, para. 108–113, which discusses "class-hopping"—the frequent change of classification societies and flag registers by vessels involved in illicit activity to avoid scrutiny.

STCW, and MARPOL is weak, with Comoros-flagged vessels consistently subject to detention for serious deficiencies. Labour conditions are among the poorest globally, with the flag state neither party to the MLC nor maintaining any enforcement mechanism for seafarer welfare.

Comoros offers no practical enforcement or due diligence mechanisms to prevent such misuse of its flag. Registration processes are handled via private agents abroad, with limited state involvement, allowing high-risk actors to operate with near-total anonymity. The registry is thus a preferred choice for shadow fleet operators seeking to evade sanctions, insurance requirements, and port state inspections (FinCrime Central, 2024).[182]

In addition, the Comoros plays a significant role in circumventing global efforts to regulate end-of-life vessel management, as its registry is used to avoid compliance with regulatory frameworks that set standards for environmentally sound and safe ship recycling. Its involvement in IUU fishing and failure to implement basic fisheries management further destabilise regional and global governance mechanisms. Finally, the registry has also become a tool for illicit financial and trade activities. With virtually no verification of UBO and minimal operational oversight, the registry facilitates money laundering, sanctions evasion, and illegal oil transshipments, which undermine both international legal frameworks and the integrity of global supply chains.

All the above practices reflect the deep structural weakness of the flag State's maritime governance. Overall, the Union of the Comoros has adopted a maritime registry model that prioritises short-term economic gain over regulatory integrity, governance, and international reputation.

Therefore, while the Comoros International Ship Registry offers short-term financial benefits, its structural deficiencies create long-term strategic risks. The reliance on a privatised, minimally regulated registry model undermines national sovereignty over its maritime sector and exposes Comoros to international sanctions, reputational damage and exclusion from cooperative maritime agreements. The registry’s association with the shadow fleet and sanctions evasion increases the risk of geopolitical backlash, including potential restrictions on Comorian-flagged vessels accessing major ports. Furthermore, the lack of enforcement of safety, environmental, and labour standards heightens the probability of severe maritime incidents, which could have catastrophic legal and financial consequences.

[182] FinCrime Central. (2024). *Iranian Oil Smuggling and the Shadow Fleet*. Retrieved from https://fincrimecentral.com/iranian-oil-smuggling-shadow-fleet-sanctions/

6.3. Liberia

Liberia hosts one of the world's largest open registers,[183] attracting a vast fleet of foreign-owned vessels due to its lenient regulatory environment and competitive fees.

Liberia's maritime registry significantly bolsters its economy, despite the nation's limited domestic maritime infrastructure. As of 2023, Liberia's registry encompassed over 4,820 ships, totalling approximately 378 million deadweight tons, positioning it among the world's largest ship registers.[184]

This extensive registry generates substantial revenue. For instance, in 2021 alone, the Liberian International Ship & Corporate Registry (LISCR) contributed over US$13.8 M to the national budget, with more than US$6 M directly deposited into the Consolidated Fund.[185] These earnings are particularly impactful given Liberia's limited port infrastructure, exemplified by the Freeport of Monrovia, which, despite modernisation efforts, remains the country's primary commercial port.[186]

Thus, the maritime registry serves as a crucial economic pillar, compensating for the country's infrastructural constraints. Despite the country's limited domestic maritime infrastructure, this registry contributes substantially to Liberia's economy by attracting shipowners by combining the economic benefits of low-cost, flexible regulation with international legitimacy, thereby offering an appealing alternative to stricter EU-aligned registers. Table 16 indicates the growth of the fleet.

[183] As per Table 3 Liberia ranks first in terms of DWT.

[184] UNCTAD Maritim Profile Liberia https://unctadstat.unctad.org/CountryProfile/MaritimeProfile/en-GB/430/index.html?utm

[185] FrontPageAfrica Releases 2021 Evaluation of State Owned Enterprises and Integrity Institutions: https://frontpageafricaonline.com/front-slider/liberia-frontpageafrica-releases-2021-evaluation-of-state-owned-enterprises/?utm

[186] See Logistics Performance Index of World Bank 2023, https://lpi.worldbank.org/sites/default/files/2023-04/LPI_2023_report_with_layout.pdf

Liberia	2019	2020	2021	2022	2023	2024
Percentage of global fleet value	8.55	9.19	10.06	12.25	11.78	12.55
Number of ships	3,482	3,715	3,932	4,300	48,20	5,215
Gross Tonnage	154,078	171,629	185,318	207,590	233,231	257,160
Dead weight tons in thousands	243,887	275,242	299,827	335,725	378,303	408,369
Percentage of total world	12,256	13,275	14,018	15,217	16,611	17,349
Average age of vessels (years)	11	11	11	12	12	13

Table 16: Analysis of the Liberian fleet[187]

ix) Implementation of core international instruments

Liberia scores 0.545 on the ratification index developed for this study.[162] It should be noted that the EU average is 0.514. However, instruments demonstrating high commitment to specific objectives, such as the Cape Town Agreement 2012 (CTA)[188] and SUA Protocol 2005,[189] are not ratified by Liberia.

The Liberian International Ship and Corporate Registry (LISCR) operates under the authority of the Liberian government and has positioned itself as one of the leading open registers globally by emphasising efficiency and regulatory compliance. According to the analysis of PSC records[190], Liberia maintains a relatively strong performance in terms of detentions and deficiencies, frequently ranking among higher-performing flags in the Paris and Tokyo MoU's. This suggests that vessels under the Liberian flag generally meet international safety and operational standards. EMSA data, examined in earlier stages of the project,

[187] Source: UNCTAD.

[188] The Cape Town Agreement (CTA) of 2012 is an international treaty adopted under the International Maritime Organization (IMO), aiming to improve the safety of fishing vessels 24 meters in length and above. It sets minimum requirements for vessel construction, equipment, stability, seaworthiness, life-saving appliances, and inspection procedures. Unlike earlier efforts (e.g., the 1993 Torremolinos Protocol), the CTA offers greater flexibility to encourage wider ratification, particularly by developing countries. The agreement will enter into force once ratified by at least 22 states with a combined fleet of 3,600 eligible vessels. (2012 Cape Town Agreement (Explained)

[189] The SUA Protocol 2005 (Protocol to the 1988 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation) is an international legal instrument adopted under the International Maritime Organization (IMO). It expands the scope of the original SUA Convention (1988) to address new maritime threats, particularly terrorism, WMD (weapons of mass destruction) transport, and use of ships as weapons, following the 9/11 attacks. (Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf)

[190] FAO: Liberia accedes to the Agreement on Port State Measures https://www.fao.org/port-state-measures/news-events/detail/en/c/1199021/

further supports this view by indicating Liberia's improving compliance trends. Issues remain, however, regarding certain substandard ships and recurring deficiencies in areas such as fire safety systems and life-saving appliances.[191]

x) Registration terms and fees

The Liberian International Ship Registry (LISR) operates under the authority of Liberia's Maritime Law, notably the Liberian Maritime Act of 1973 (as amended in August 2022). The Liberian International Ship and Corporate Registry (LISCR) is a U.S.-based private entity headquartered in Virginia. Its marketing operates through Liberian embassies and global offices, offering 24/7 services with rapid processing.

Liberia requires that ships registered under its flag comply with core IMO instruments, including SOLAS, MARPOL, and the STCW Convention, while also undergoing regular inspections and audits. The flag's regulatory framework emphasises adherence to international norms, although concerns persist around oversight gaps common to many FOC registers. Nevertheless, Liberia's strategic engagement with digital services and rapid registration turnaround has bolstered its reputation, especially among commercial operators seeking a balance between regulatory compliance and operational flexibility.

However, Liberia allows for ship registration without requiring a "genuine link": there is no requirement that beneficial ownership be tied to Liberia. This lack of strict national connection facilitates the use of nominee structures and offshore entities to shield the identity of the UBO, although recent transparency efforts have aimed to improve oversight. The fee structure of LISR is competitive and tiered. It includes an initial registration fee, annual tonnage tax (based on gross tonnage), and other service charges for inspections, certifications, and radio licenses. These costs are generally lower than those applied by many national registers, making LISR an attractive option for international operators.

According to available industry estimates and LISCR statements, Liberia earns over US$20 M annually from its ship registry, contributing significantly to public revenues, including direct remittances to the national budget. This income is especially impactful given Liberia's limited industrial base and economic dependence on foreign sectors. However, some analysts argue that the outsourced nature of the registry may dilute national control and limit transparency around the full distribution of revenues between LISCR and the Liberian government.

[191] "Despite Liberia's efforts, Port State Control (PSC) inspections continue to identify significant recurring deficiencies—most notably in fire-safety systems (e.g., fire-doors in fire-resisting divisions) and life-saving appliances such as lifeboats—which remain among the most frequent causes for ship detentions. Additionally, Liberia's Marine Notices (e.g., INS-004, Rev. 10/23) acknowledge this and urge masters to ensure these systems are always in serviceable condition.

xi) Safety and Labour Standards

Liberia is a signatory to key IMO and ILO conventions, including the STCW and the MLC, 2006. The Liberian Maritime Authority is responsible for enforcing compliance, with oversight mechanisms for training institutions and labour conditions aboard flagged vessels. PSC data, particularly from Paris and Tokyo MoU's, indicates a relatively low detention rate among Liberian-flagged tankers and bulk carriers, suggesting general compliance with safety protocols.

However, inconsistencies persist. Reports from external audits, such as EMSA, have identified implementation gaps in STCW compliance. On the labour front, violations of the MLC have included cases of crew abandonment,[192] wage non-payment, and breaches of rest hour provisions. The International Transport Workers' Federation (ITF) has documented multiple complaints involving Liberian-flagged ships, often registered under opaque ownership structures.[193]

xii) Environmental Protection

Liberia has ratified all six annexes of MARPOL and has incorporated them into its maritime legislation. While the registry formally adheres to international environmental standards, enforcement remains inconsistent. PSC records have documented MARPOL violations involving the illegal discharge of oily waste and the bypassing of pollution prevention equipment such as oily water separators. Although Liberia retains a White List status under the major MoU, the sheer size of its fleet complicates comprehensive environmental monitoring.

Liberia ratified the HKC in 2023,[194] contributing to the Convention's entry into force in 2025. However, the dismantling of vessels flying the Liberian flag does not fall within the scope of the EU-SRR. Although fewer than those of Comoros, Liberia also attracts a significant number of vessels changing flags shortly before dismantling. A significant proportion of Liberian-flagged vessels are dismantled in facilities located in South Asia—such as Alang (India) and Chattogram

[192] ITF: Seafarer Abandonment Cases (archived)
https://www.itfseafarers.org/en/directories/abandonment-list

[193] has documented cases involving Liberian-flagged vessels—such as the detention of the Anna-Elisabeth bulk carrier—where crew members lodged complaints about insufficient food, bullying, and denial of shore leave; more broadly, the ITF highlights that opaque ownership structures coupled with flags of convenience, including Liberia's, contribute significantly to such abuses.

[194] International Maritime Organization (IMO): Recycling of ships and the Hong Kong Convention
https://www.imo.org/en/MediaCentre/HotTopics/Pages/Recycling-of-ships-and-Hong-Kong-Convention.aspx

LISCR: Liberia deposits the ratified Hong Kong Convention
https://www.liscr.com/news-and-insights/liberia-deposits-the-ratified-hong-kong-convention-and-triggers-entry-into-force-date

Shipbreaking Platform: NGOs warn that Hong Kong Convention will fail to ensure sustainable ship recycling
https://shipbreakingplatform.org/hkc-fails-to-ensure-sustainable-ship-recycling/

(Bangladesh)—where environmental and labour protections often fall short of international standards. While Liberia has launched a Green Ship Recycling Program,[195] its enforcement and impact remain limited so far.

xiii) Fisheries

Liberia was pre-identified by the European Commission as a non-cooperating country in the fight against illegal, unreported, and unregulated (IUU) fishing in May 2017, receiving what is known as a "yellow card" under the EU IUU Regulation. This decision reflected concerns over Liberia's insufficient control of vessels flying its flag, including weak monitoring and enforcement mechanisms (European Commission, 2017). [196]

Since then, Liberia has taken a number of steps to address these concerns. The government established the National Fisheries and Aquaculture Authority (NaFAA) in 2017 and adopted the Fisheries and Aquaculture Management and Development Law in 2019. It has also invested in a Fisheries Monitoring Centre (FMC)[197], introduced Collaborative Management Associations (CMA)[198] to strengthen participatory governance, and joined international initiatives such as the Fisheries Transparency Initiative (FiTI) and the Global Charter for Fisheries Transparency (Environmental Justice Foundation, 2025).[199] In addition, the European Union has provided technical assistance to Liberia to help strengthen its fisheries governance and ensure progress towards restoring full market access (Feed Business MEA, 2024).[200]

While no dedicated press release is visible in EU sources, the European Commission recognised Liberia's yellow card status,[201] and the ongoing IUU

[195] LISCR: Green Ship Recycling Program https://www.liscr.com/about-us/green-ship-recycling-program

[196] European Commission. (2017). Commission Decision on notifying third countries under the IUU Regulation – Liberia (Yellow Card). - https://ec.europa.eu/newsroom/mare/items/topic/331.

[197] Fisheries Monitoring Centre (FMC) is specialised facility responsible for monitoring, controlling, and surveilling fishing activities - often using satellite-based vessel monitoring systems (VMS) in conjunction with AIS - to ensure compliance with fisheries laws, prevent IUU fishing, and support sustainable resource management.

[198] Collaborative Management Associations (CMA) are local organisations or community-based groups formed to jointly manage fisheries resources. They bring together fishermen, local communities, and government agencies to share responsibility, decision-making, and benefits from sustainable fisheries practices.

[199] Environmental Justice Foundation. (2025). Liberia Transparency Analysis Report 2025. London: EJF - https://ejfoundation.org/resources/downloads/Liberia-transparency-analysis-report-2025.pdf

[200] Feed Business MEA. (2024, December 3). EU technical assistance boosts Liberia's fisheries sector - https://www.feedbusinessmea.com/2024/12/03/eu-technical-assistance-boosts-liberias-fisheries-sector

[201] European Parliament. (2017). *The EU's fight against illegal, unreported and unregulated (IUU) fishing*. European Parliamentary Research Service (At a glance, PE 614.599). Retrieved from https://www.europarl.europa.eu/RegData/etudes/ATAG/2017/614599/EPRS_ATA(2017)614599_EN.pdf

dialogue is acknowledged in statements by the National Fisheries and Aquaculture Authority (NaFAA)[202]. The yellow card status remains an important consideration when evaluating Liberia's performance as a flag State, as it highlights both past shortcomings and ongoing reforms in its fisheries sector.

xiv) Taxation and Market Fairness

Liberia's open registry model is closely associated with tax avoidance strategies and the circumvention of financial disclosure norms. The registry permits the use of shell companies and anonymous ownership structures, which are legal under Liberian law. Although Liberia is a member of the Inter-Governmental Action Group against Money Laundering in West Africa (GIABA),[203] its flagging system has been identified by civil society[204] and regulatory bodies for facilitating illicit financial flows, including money laundering, tax evasion and the reflagging of vessels. These practices undermine fair competition, allowing Liberian-flagged operators to significantly reduce costs while externalising risks and responsibilities.

xv) Security and Supply Chains.

Liberia's registry has come under scrutiny for its alleged involvement, either directly or indirectly, in sanctions evasion and illicit trade.[205] Liberian-flagged vessels have been implicated in unauthorised oil shipments to sanctioned countries such as North Korea, Iran and Venezuela. Investigations by media and enforcement agencies have revealed that these vessels often operate as part of a so-called "shadow fleet," characterised by behaviours such as AIS signal manipulation, lack of insurance coverage and the use of complex corporate networks to obscure beneficial ownership.

Although Liberia has responded to international pressure by occasionally deregistering certain vessels, the structural incentives associated with open

[202] National Fisheries and Aquaculture Authority (NaFAA). (2023). *Working to protect fish resources: Commissioner Nagbe on Liberia's fight to leave EU yellow card list*. Government of Liberia. Retrieved August 20, 2025, from https://lima.gov.lr/index.php/marketing/press-releases/working-to-protect-fish-resources-commissioner-nagbe-on-liberia-s-fight-to-leave-eu-yellow-card-list?format=print&print=1&tmpl=component

[203] The Inter-Governmental Action Group against Money Laundering in West Africa (GIABA) is a specialised institution of the Economic Community of West African States (ECOWAS) established in 2000. It serves as a Financial Action Task Force (FATF)-Style Regional Body (FSRB) with the mandate to strengthen the capacity of member states to prevent and combat money laundering, terrorist financing, and related crimes in the region.

[204] Tax Justice Network has labeled Liberia a "magnet" for these illicit practices, highlighting its ranking as the 7th most secretive jurisdiction in 2020 https://georgephilipas.com/liberia-and-liscr-the-shipping-and-corporate-registry-a-rich-and-secretive-history-that-lays-bare-the-double-standards-of-globalisation-in-the-west/

[205] Russia oil fleet shifts away from Liberia, Marshall Island flags amid US sanctions crackdown (Reuters) https://www.reuters.com/business/energy/russia-oil-fleet-shifts-away-liberia-marshall-island-flags-amid-us-sanctions-2024-03-06/

registers—such as revenue generation and competitive advantage—create disincentives for proactive enforcement.

xvi) Conclusion

Liberia's maritime register occupies a critical intersection of economic utility and regulatory leniency. It enables the operation of a vast and commercially significant fleet that contributes to the country's revenue and global shipping efficiency. Operating under an open register model, Liberia offers shipowners a strategic combination of low costs, flexible operational conditions, and international regulatory recognition. In comparison, it exhibits recurring weaknesses in enforcement across multiple regulatory domains. These include safety oversight, environmental compliance, labour rights, financial transparency and maritime security.

Despite its ratification of international conventions and strong PSC performance in select regions, the registers' open nature facilitates the circumvention of stringent regulatory regimes. Liberia's partial deregistration efforts, driven by external pressure, demonstrate reactive rather than proactive governance, exposing oversight weaknesses despite formal adherence to international standards. This has reputational implications for Liberia. By offering a commercially appealing yet relatively unrestrictive regulatory framework, Liberia preserves competitive pressures that encourage shipowners to avoid stricter jurisdictions, thus fragmenting global governance efforts.

6.4. Marshall Islands

The Republic of the Marshall Islands (RMI) operates one of the world's largest ship registers,[206] positioning itself as a significant player in the global shipping industry. Vessels flagged under the Marshall Islands are engaged in a broad spectrum of international trade, further solidifying the country's role as a leading open register. The register is managed by International Registers, Inc. (IRI). As of January 2024, the RMI register surpassed 200 million gross tons, encompassing nearly 5,600 vessels, making it a leading global maritime register.

The Pacific archipelago of 29 atolls and five islands has built a maritime economy that is both a necessity and an opportunity, given its remote geography and limited land resources. The archipelago's scattered nature means that efficient and reliable maritime transport is vital for connecting its communities, supporting trade, and ensuring access to essential goods, as the nation imports almost all food, fuel, and manufactured products. The Marshall Islands' maritime sector is central to its economic survival and development, shaped by its unique geography and the challenges of isolation. Table 17 indicates the growth of the fleet.

[206] As per Table 3 Marshall Islands ranks third in terms of DWT.

Marshall Islands	2019	2020	2021	2022	2023	2024
Percentage of global fleet value	11.31	10.98	10.49	10.12	11.41	11.87
Number of ships	3,539	3,687	3,825	4,049	4,184	4,273
Gross Tonnage	152,953	161,177	168,204	178,143	184,395	189,077
Dead weight tons in thousands	245,715	262,055	274,265	290,273	299,809	308,501
Percentage of total world	12,348	12,639	12,823	13,157	13,165	13,106
Average age of vessels (years)	9	9	9	10	10	11

Table 17: Analysis of the Marshall Islands fleet[207]

i) Implementation of core international instruments

RMI scores 0.481 on the ratification index developed for this study.[162] It should be noted that the EU average is 0.514, while the two direct FOC competitors, Panama and Liberia, score 0.439 and 0.545, respectively. However, instruments demonstrating high commitment to specific objectives, such as the Cape Town Agreement 2012, have not been ratified.

The RMI flag maintains a strong reputation in international PSC regimes. The RMI is listed on the White List under the Tokyo MoU, indicating a low-risk flag with high compliance standards. Similarly, the RMI holds a position on the White List under the Paris MoU, reflecting consistent adherence to international maritime regulations.

EMSA recognises the RMI for its effective implementation of international maritime safety regulations and proactive measures to safeguard the marine environment. The registers proactive approach to compliance and its collaboration with international bodies contribute to its positive standing in EMSA assessments.

ii) Registration terms and fees

The RMI Maritime Act of 1990 provides the legal foundation for vessel registration, emphasising:

- Genuine Link: The Act ensures that vessels registered under the RMI flag maintain a legitimate relationship to the state, aligning with international conventions.

[207] Source: UNCTAD.

- UBO Confidentiality: The register enforces specific measures to protect the interests of ultimate beneficial owners, including strict confidentiality provisions, secure corporate registers, and legal frameworks that prevent unauthorised disclosure of ownership information.
- Registrar Rights: The Maritime Administrator possesses the authority to enforce compliance, conduct inspections, and, if necessary, revoke registrations to maintain the integrity of the register.

Managed by International Registries, Inc. (IRI), the RMI register operates through a decentralised model with offices in key maritime hubs. Its global reach is facilitated through a network of offices worldwide. This extensive network supports shipowners with registration services, technical support, and regulatory compliance assistance. This structure allows for efficient service delivery and responsiveness to the needs of the global shipping community.

The RMI register offers and publicises a competitive fee schedule:

- Initial Registration: US$2,500 per vessel.
- Annual Tonnage Tax: US$0.20 per net ton, with a minimum of US$500.
- Re-registration Fee: US$1,750 per vessel.
- Maritime Security and Compliance Fee: US$250 annually.

While specific revenue figures are proprietary, the registers scale suggests substantial revenues from registration fees, tonnage taxes, and related services. Estimated revenues approach US$15M, highlighting the strong financial incentive to maintain and operate the register.

iii) Safety and Labour Standards

The RMI complies with major international conventions, including the STCW and the MLC.[208] The register claims to uphold high safety and training standards and remains as befits its status on both the Paris and Tokyo MoU's. However, operational discrepancies are evident. Recent PSC data from Paris MoU[209] reports show a moderate increase in detention rates for RMI-flagged vessels, raising concerns about the effectiveness of flag State oversight.

Persistent labour-related issues further challenge the credibility of the RMI's adherence to international standards. Documented violations include seafarer abandonment, non-payment of wages, and breaches of rest requirements. The ITF and ILO have recorded repeated complaints[210], especially in cases involving

[208] ILO Database on Maritime Labour Convention: https://www.ilo.org/dyn/seafarers/seafarersbrowse.home

[209] Paris MoU Annual Report (2023): https://parismou.org/2024/07/2023-paris-mou-annual-report-progress-and-performance-highlights-paris-mou-2023

[210] ITF Seafarers' Trust – Abandonment and MLC Violations (2022): https://www.itfseafarers.org/en/directories/abandonment-list

complex ownership arrangements that obscure accountability. While the RMI mandates liability insurance for crew welfare and death benefits, enforcement remains reactive rather than preventive, reflecting a wider structural gap typical of open register models.

iv) Environmental Protection

RMI is a signatory to all six MARPOL annexes and has integrated environmental standards, including Polar Code provisions, into its national maritime law. The flag claims commitment to environmental protection through regulatory mechanisms such as inspection regimes and pollution control measures.

However, environmental compliance has proven uneven in practice. RMI-flagged vessels have been cited for illegal discharges and poor waste management practices. In January 2024, the RMI acceded to the HKC[211], supporting global efforts to promote greener shipbreaking. However, the dismantling of vessels flying the RMI flag does not fall within the scope of the EU-SRR. RMI also attracts vessels re-flagged shortly before dismantling. These are often dismantled in substandard facilities, particularly in South Asia, raising concerns about environmental and labour standards. While the register has acknowledged these issues and expressed support for responsible recycling, enforcement capabilities remain limited.

v) Fisheries

Marshall Islands–flagged distant water fishing vessels have attracted scrutiny for unsustainable practices and exposure to IUU-linked operations. While specific NGO investigations directly implicating Marshall Islands flags are limited, several indicators raise concern:

- In April 2023, the Marshall Islands adopted a maritime domain awareness platform—developed in New Zealand—to strengthen detection of suspected illegal fishing in its waters, underlining existing surveillance gaps.[212]
- As of 2011, only 4 out of 55 longline vessels licensed in the Marshall Islands' Exclusive Economic Zone (EEZ)[213] actually flew its flag; the other 51 were foreign-flagged (Chinese, Japanese, Federated States of

[211] LISCR – RMI Accession to the Hong Kong Convention (2024): https://www.liscr.com/news-insights

[212] Western and Central Pacific Fisheries Commission. (2013, August). Annual Report Part 1: Report from the Marshall Islands (CCM-12). Scientific Committee, 8th Regular Session. Retrieved from: https://web.archive.org/web/20130512224338/http://www.wcpfc.int/system/files/documents/meetings/scientific-committee/8th-regular-session/annual-report-part-1/AR-CCM-12RMI.pdf

[213] The Marshall Islands' Exclusive Economic Zone (EEZ) spans nearly 2 million km² of the central Pacific, granting it sovereign rights over marine resources under UNCLOS.

Micronesia (FSM), Taiwan), with limited onboard observer coverage—an indicator of weak operational control and transparency.

As of current records, the Marshall Islands have not been issued a yellow card under the EU IUU Regulation. These insights suggest that while some surveillance infrastructure is being enhanced, the Marshall Islands' fisheries regime continues to grapple with oversight deficiencies. These include reliance on foreign-flagged vessels, limited monitoring, and opaque vessel operations—all of which may heighten IUU risks under the Marshall Islands flag.[214]

vi) Taxation and Market Fairness

The Marshall Islands offers significant tax exemptions to vessel owners and does not impose income or corporate taxes on maritime operations outside its jurisdiction. Together with the use of anonymous shell companies and lenient beneficial ownership disclosure requirements, this tax-neutral regime is a cornerstone of its attractiveness as FOC.

Reports from the OECD[215] have highlighted the RMI's role in facilitating corporate structures that obscure financial accountability. In 2023, the Marshall Islands was added to the EU list of non-cooperative jurisdictions by the ECOFIN Council, citing specific concerns that it "attracts profits without real economic activity" and that its enforcement of economic substance requirements is weak.[216] Notably, in December 2017, the RMI was added to the EU's list of non-cooperative jurisdictions for tax purposes.[217] However, since 2025, RMI has been on the list of cooperating States with no pending issues.[218]

Although the RMI has made formal progress on Anti-Money Laundering (AML) obligations - partially meeting Financial Action Task Force (FATF)[219]

[214] Gutierrez, M., Lemma, A., Gutiérrez, G., & Montenegro, C. (2024, May). Fishy Business: Estimating the impact of irregular and unsustainable fishing of distant-water fishing fleets in Ecuador, Ghana, Peru, the Philippines and Senegal. London: ODI. Supported by UNDP Ocean Innovation Challenge. Retrieved from https://media.odi.org/documents/Fishy_Business_ODI_Report_May_2024.pdf

[215] OECD Report on Tax Transparency and Havens (2023): https://www.oecd.org/tax/beps/

[216] Taxation: British Virgin Islands, Costa Rica, Marshall Islands and Russia added to EU list of non-cooperative jurisdictions for tax purposes https://www.consilium.europa.eu/en/press/press-releases/2023/02/14/taxation-british-virgin-islands-costa-rica-marshall-islands-and-russia-added-to-eu-list-of-non-cooperative-jurisdictions-for-tax-purposes/?utm_source=chatgpt.com

[217] Council of the European Union. (2017, December 5). *Council conclusions on the EU list of non-cooperative jurisdictions for tax purposes* (ST-15429-2017-INIT). Brussels: General Secretariat of the Council. Retrieved from https://data.consilium.europa.eu/doc/document/ST-15429-2017-INIT/en/pdf

[218] Council of the European Union. (2025, February 18). EU list of non-cooperative jurisdictions for tax purposes. Retrieved August 18, 2025, from https://www.consilium.europa.eu/en/policies/eu-list-of-non-cooperative-jurisdictions/

[219] FATF Mutual Evaluation Reports: https://www.fatf-gafi.org/publications/mutualevaluations/documents/mer-marshall-islands.html

recommendations - significant gaps persist in monitoring UBO and enforcing compliance.

vii) Security and Supply Chains

RMI-flagged vessels have been repeatedly implicated in sanctions evasion, particularly in relation to oil shipments involving North Korea, Iran and, more recently, Russia. The register does not maintain an autonomous sanctions regime but claims alignment with international standards, including those of the UN[220] and the US sanctions frameworks. Nonetheless, multiple advisories from the UN Security Council and the U.S. Office of Foreign Assets Control (OFAC)[221] have named RMI-flagged ships for violations.

The flag has also been associated with the so-called “shadow fleet”. Although the register has deregistered some implicated vessels, the vast scale of its fleet and the commercial imperatives of an open registry constrain proactive oversight.

viii) Conclusion

The RMI register has strategically positioned itself by blending the economic advantages of an open register with a veneer of regulatory credibility. The RMI’s maritime model reflects a calibrated compromise between regulatory credibility and commercial expediency. The flag State retains a positive reputation in formal international evaluations, including PSC performance, EMSA recognition, and ratification of key IMO and ILO instruments. However, its economic model hinges on flexible regulations, tax exemptions, and corporate secrecy—features that attract shipowners seeking cost efficiency and minimal oversight.

This dual approach attracts shipowners seeking operational efficiency while circumventing the stringent safety, labour, and environmental standards. It has contributed to RMI's rapid fleet expansion, despite concerns over vessel ageing and operational risks. While the RMI enforces a "genuine link" under its Maritime Act, its mechanisms for verifying beneficial ownership and curbing misuse of its flag remain weak.

However, this dual strategy also reveals structural tensions. Although the RMI has ratified numerous IMO and ILO instruments and acceded to the HKC on ship recycling, concerns remain over the effective management of emerging risks, notably related to money laundering, shadow fleets and sanctions evasion. Its expansive growth model, while economically advantageous, has made it more challenging to exert consistent oversight across its large and diverse fleet. Recent associations with opaque maritime practices, such as vessels linked to

[220] UN Security Council Sanctions Reports (2023): https://www.un.org/securitycouncil/sanctions/information

[221] OFAC Maritime Advisory (2023): https://home.treasury.gov/policy-issues/financial-sanctions/recent-actions

sanctioned activities, underscore the limits of a regulatory model heavily reliant on private management and decentralised operations.

6.5. Panama

Panama is a key hub for global maritime trade, largely due to the Panama Canal, which connects the Atlantic and Pacific Oceans. Managed by the Panama Canal Authority, the canal has boosted international shipping since 1914, with a 2016 expansion increasing capacity for larger vessels.

Panama holds a prominent position in the global maritime sector, consistently maintaining the largest ship register in the world.[222] With a fleet comprising over 8,000 vessels, Panama accounts for approximately 15 to 18 per cent of the world's merchant tonnage. This substantial market share underscores its central role in the international shipping industry and reflects its appeal as a registry.

The Panama Registry was established in 1917. Panama provides a publicly operated FOC register, with over 8,000 ships accounting for nearly 23% of global deadweight tonnage (Table 18). Panama's fleet has grown in absolute size and capacity, but is facing challenges in maintaining its global market share. While gross tonnage and DWT continue to rise, the decline in the percentage of the value of the global fleet signals potential competitive pressures. The ageing fleet may also require modernisation to remain competitive. The increase in ship size suggests a move towards efficiency, which may help offset the decline in fleet value over time.

Recent studies offer a nuanced perspective on Panama's maritime strategy, noting its alignment with international regulatory standards set by the IMO while maintaining a high degree of operational flexibility and cost-efficiency. This balanced approach enhances Panama's appeal to shipowners looking for compliant yet economically viable registration options. Drawing on its long-standing experience and extensive global network, Panama continues to position itself as a competitive and adaptable register in the evolving maritime landscape.[223] Table 18 indicates the growth of the register.

Panama	2019	2020	2021	2022	2023	2024
Percentage of global fleet value	14.23	13.42	13.65	13.37	12.86	12.75
Number of ships	7,808	7,905	7,967	7,993	8,198	8,338
Gross Tonnage	218,985	218,364	227,114	230,706	239,246	246,707

[222] As per Table 3 Panama ranks first as per number of ships and second in terms of DWT.

[223] Francisco Piniella, Juan Ignacio Alcaide, Emilio Rodríguez-Díaz, The Panama Ship Registry: 1917–2017, Marine Policy, Volume 77, 2017, Pages 13-22, ISSN 0308-597X, https://doi.org/10.1016/j.marpol.2016.12.007. (https://www.sciencedirect.com/science/article/pii/S0308597X16306996)

Panama	2019	2020	2021	2022	2023	2024
Dead weight tons in thousands	333,788	329,132	344,580	350,896	366,013	379,833
Percentage of total world	16.774	15.875	16.111	15.904	16.072	16.136
Average age of vessels (years)	18	18	18	19	19	19
av. size of ship DWT	28,046	27,623	28,506	28,863	29,183	29,588

Table 18: Analysis of the Panamanian fleet[224]

i) Implementation of core international instruments

Panama scores 0.439 on the ratification index developed for this study.[162] It should be noted that the EU average is 0.514. Panama is a Council Member of the IMO and has ratified all major instruments. However, instruments demonstrating a high commitment to specific objectives, such as the Cape Town Agreement of 2012 and the OPRC/HNS of 2000, have not been ratified by Panama.

Historically, Panama-flagged vessels have appeared on the "Grey List" of the Paris and Tokyo MOU, indicating an average performance with a balanced ratio of detentions and inspections. This status suggests that while many Panama-flagged ships comply with international standards, there is room for improvement to achieve "White List" status.

ii) Registration terms and fees

The Panama register has become emblematic of the open register model, characterised by its accessible and cost-effective registration process. Shipowners are drawn to the register for its competitive fee structures, a favourable fiscal regime, and policies that allow vessel registration regardless of the owner's nationality or operational base. These features contribute significantly to the registry's expansive growth and global relevance.

The “genuine link”[225] is addressed in Panama's maritime legislation. Law No. 57 of August 6, 2008**,** known as the General Merchant Marine Law, outlines the requirements and obligations for vessels registered under the Panamanian flag. The key provisions related to the "genuine link" include:

- Article 30: This article stipulates that vessels registered in Panama must have a resident agent within the country. The resident agent serves as a liaison between the shipowner and Panamanian authorities, ensuring effective communication and compliance with national regulations.

[224] Source: UNCTAD.

[225] The concept of a "genuine link" between a vessel and its flag state is a fundamental principle in international maritime law, ensuring that the flag state exercises effective jurisdiction and control over ships flying its flag.

- Article 40**:** Under this provision, shipowners must still ensure that a degree of operational and administrative control is exercised from within Panama, aligning the open register model with certain national oversight requirements. This ensures that decisions regarding the vessel's management, crewing and maintenance are made under the purview of Panamanian jurisdiction.

In practice, compliance with these provisions is typically achieved by establishing a legal entity registered in Panama. By forming a Panamanian corporation or a similar legal entity, shipowners can ensure that the vessel's management and decision-making processes are conducted within Panama's jurisdiction. Since the approval of Law No. 129 in March 2020, Panama has introduced a legal framework requiring the disclosure of UBO information for all entities registered in the country, including corporations and foreign entities listed in the Panama Registry. Under the law, resident agents must submit UBO data to the Superintendence of Non-Financial Institutions. A UBO is defined as a natural person who directly or indirectly owns, controls, or significantly influences an entity or its transactions. Significant control may include holding 25% or more of shares or voting rights, acting as a trustee or beneficiary of a trust, or managing an estate in cases involving deceased shareholders. The UBO register is not public and can only be accessed by resident agents, authorised legal entities, and designated officials of the Superintendence under strict security protocols. Entities formed after March 20, 2020, must submit UBO details within 30 business days of incorporation. Pre-existing entities had six months from that date to comply. Any subsequent changes to UBO information must also be reported within 30 business days.[226]

Panama has implemented significant technological advancements to make the register more efficient and user-friendly for shipowners and operators. The registration process has been streamlined, allowing vessels to be registered in less than 24 hours if all requirements are met. The register maintains 96 registration offices worldwide, enabling convenient registration through Panama consulates in various countries. Most register documents, including ship registration and radio licenses, can be issued electronically. Hence, the Panama Registry remains attractive to the maritime industry due to its market-oriented procedures, consistent performance in PSC inspections, currently ranked on the grey list, and its long-standing market presence, which is reinforced by strong recognition among financiers and underwriters.

The published registration fees appear lower than those of competing registers (Table 19), for example, compared with the reported fees of RMI (see Section 6.4). The estimated revenues from the Panama Registry are close to USD25 million.

[226] See https://www.wolterskluwer.com/en/expert-insights/panama-introduces-beneficial-ownership-register

Fee Category	Description	Payment Terms
Enrolment Fee	This initial fee is assessed when a vessel enters the Panama Registry. The amount varies based on the vessel's tonnage and type.	One-Time Fee
Registration Fee	Calculated at US$0.10 per Net Ton, this fee is payable annually to maintain the vessel's registration.	Annual Fee
Annual Consular Fee	**This fee varies depending on the vessel's gross tonnage (G.T.) and type. For example:**	
	Passenger, Fishing, Cargo Vessels, etc.:	
	Up to 1,000 G.T.	US $1,200
	Over 1,000 G.T. to 3,000 G.T.	US $1,800
	Over 3,000 G.T. to 5,000 G.T.	US $2,000
	Over 5,000 G.T. to 15,000 G.T.	US $2,700
	Over 15,000 G.T.	US $3,000
	Non- Profit Sport Vessels (Yachts):	
	Under Panamanian Ownership	US $1,000
	Under Foreign Ownership	US $1,500
Annual Inspection Fee	**Applicable based on the vessel's type and tonnage. For instance:**	
	Passenger Vessels	
	Up to 1,600 G.T.	US $ 900
	Over 1,600 G.T.	US $1,800
	Tanker Vessels	
	Up to 500 G.T.	US $ 500
	Over 500 G.T. to 1,600 G.T.	US $ 750
	Over 1,600 G.T. to 5,000 G.T.	US $ 850
	Over 5,000 G.T. to 15,000 G.T.	US $1,000
	Over 15,000 G.T.	US $1,200

Table 19: Registration Fees of Panama

Another advantage of the Panamanian system is the so-called "Dual Registry".[227] A foreign vessel, bareboat chartered for two years, can be registered in Panama for the same period without losing its previous registration. The opposite is also permissible, provided a Certificate of Consent from the country where the vessel

[227] The Dual Registry System was established in Panama by means of Law No. 1 of 1973, and later amended by Law No. 3 in 1973.

was initially registered is provided. The Dual Registry System offers a significant advantage for the shipping community, particularly for ship owners with no vessels under the open register.

iii) Safety and Labour Standards

Panama is a signatory to key international maritime conventions, including STCW.[228] The Panama Maritime Authority (PMA) enforces these standards to maintain the international credibility of its ship registry, ensure the safety and welfare of seafarers, prevent detentions in foreign ports, and uphold Panama's standing with organisations like the IMO and ILO, which is essential for the continued attractiveness of the register.

While Panama has ratified the STCW and the MLC on seafarer training and welfare, there have been instances of non-compliance, including crew abandonment and poor working conditions on Panama-flagged ships.

iv) Environmental Protection

Panama is a signatory to the International Convention for the Prevention of Pollution from Ships (MARPOL). Under MARPOL, Panama is obligated to prevent marine pollution. The PMA has implemented regulations to control discharges and emissions from ships. However, the involvement of Panama-flagged vessels in the "shadow fleet," which often comprises older ships with substandard maintenance, poses environmental risks due to potential non-compliance with pollution prevention standards.

In the ship recycling segment, Panama has ratified the HKC[229] and streamlined procedures with EU SRR with respect to the inventory of hazardous materials. However, the dismantling of vessels flying the flag of Panama does not fall within the scope of the EU Ship Recycling Regulation, and it attracts a significant number of vessels changing flag shortly before dismantling. These are regularly sent to facilities that raise concerns about environmental and labour standards.

v) Fisheries

Panama's ship register includes a substantial number of fishing vessels operating globally, and the country has faced persistent criticism for insufficient oversight of these vessels. In 2019, Panama was pre-identified by the European Commission as a non-cooperating country in the fight against illegal, unreported, and unregulated (IUU) fishing, receiving a "yellow card" for the second time under

[228] International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention or STCW) sets minimum qualification standards for masters, officers and watch personnel on seagoing merchant ships and large yachts.

[229] See https://www.panamashipregistry.com/wp-content/uploads/2020/08/MMC-386-Inventory-of-Hazardous-Materials-for-ships-calling-at-EU-ports..pdf

the EU IUU Regulation (European Commission, 2019).[230] The Commission highlighted systemic weaknesses in monitoring, control, and surveillance of Panama-flagged fishing vessels, as well as shortcomings in sanctioning illegal operators.

On 12 December 2019, the European Commission officially reissued a yellow card to Panama, citing backsliding in its role as a flag, coastal, port, and market State.[231] Following this decision, Panama has undertaken measures to address these deficiencies. Reported reforms include efforts to strengthen its fisheries governance framework, improve vessel monitoring and inspection procedures, and enhance international cooperation on IUU fishing.[232] Despite these commitments, the European Commission has noted that challenges remain in ensuring full compliance with international fisheries management and conservation standards.

The yellow card status, therefore, remains a critical benchmark when evaluating Panama's performance as a flag State in fisheries, reflecting both its ongoing regulatory challenges and the efforts underway to improve oversight of its fishing fleet.

vi) Taxation and Market Fairness

A central feature of Panama's maritime regime is its favourable tax treatment, under which income derived from international maritime operations is explicitly exempt from national income taxes. While this policy is intended to attract foreign investment and support the competitiveness of Panama's open register, it also contributes to market distortions by enabling shipowners to operate under significantly lower fiscal obligations than those registered in jurisdictions with more stringent tax regimes. This structural advantage has long raised concerns over unfair competition in the global shipping market, particularly from the perspective of national registers subject to full corporate taxation and stricter transparency rules.

The implications are further compounded by Panama's broader corporate governance environment, which has historically permitted the formation of anonymous shell companies with limited beneficial ownership disclosure requirements. The 2016 Panama Papers leak highlighted the extensive misuse of such structures for tax evasion and money laundering, exposing the risks

[230] European Commission. (2019). *Commission Decision on notifying third countries under the IUU Regulation – Panama (Yellow Card)*. Brussels: European Commission. Retrieved from https://ec.europa.eu/newsroom/mare/items/topic/331

[231] European Commission. (2019). *Questions and answers on the fight against illegal, unreported and unregulated (IUU) fishing: Commission warns Panama with a yellow card (Q&A/19/6756)*. European Commission Press Corner. Retrieved August 20, 2025, from https://ec.europa.eu/commission/presscorner/detail/en/qanda_19_6756

[232] (2019, December 6). *EU Reissues Panama a yellow card for IUU fishing for the second time*. Retrieved from https://www.seafoodsource.com/news/environment-sustainability/eu-reissues-yellow-card-to-panama

inherent in the country's opaque corporate and financial practices.[233] Although the revelations predominantly involved non-maritime entities, they underscore the vulnerability of the Panama Registry and its RO to similar exploitation. Without rigorous vetting of shipowners, oversight of flag transfers, and due diligence on UBO, the register remains at risk of facilitating illicit financial flows, sanctions evasion, and fraudulent asset shielding.[234]

These issues directly affect the credibility, security, and fairness of the global maritime system. They also highlight the need for enhanced international cooperation on transparency standards, including alignment with FATF recommendations, robust implementation of UBO disclosure mechanisms (as required under Law No. 129 of 2020), and clearer accountability for the RO responsible for vessel certification and compliance monitoring. In the context of market fairness, these elements are not peripheral but rather fundamental to evaluating the legitimacy and sustainability of Panama's role as the world's largest flag State.

vii) Security and Supply Chains

Investigations by international bodies—including the United Nations Panel of Experts, EU authorities, and independent monitoring organisations—have revealed that a significant number of vessels implicated in sanctions-evasion activities, particularly those transporting Iranian oil, Venezuelan crude, and North Korean coal, are registered under the Panamanian flag[235]. This association raises critical concerns about the Panama Registry's potential facilitation of illicit maritime activities, highlighting an urgent need for stronger regulatory oversight.

In response, Panama issued the Executive Decree No. 512 in October 2024,[236] empowering the Panama Maritime Authority (PMA) to deregister vessels or

[233] See Panama: the making of a tax haven and rogue state - https://taxjustice.net/2016/03/30/panama-the-making-of-a-tax-haven-and-rogue-state/?utm_source

[234] See 3 Ways the Panama Papers could Affect the Martime Industry - https://www.corporatecomplianceinsights.com/3-ways-panama-papers-affect-maritime-industry/?utm_source

[235] See, e.g., UN Panel of Experts (DPRK), Final Report S/2021/211 (4 Mar 2021) (tracing the then Panama-flagged Mouson 328 as a vessel of interest in DPRK coal transfers); and S/2014/147 (6 Mar 2014) (identifying the Panama-flagged Guang Hai in a DPRK-linked sanctions-evasion network). EU authority: European Parliamentary Research Service, Russia's "shadow fleet": Bringing the threat to light (Nov. 2024) (notes that shadow-fleet tankers commonly use flags of convenience including Panama). Independent monitors: C4ADS, Staying Afloat (Jul. 2020) (after PDVSA's designation, Panama-flagged ships made up ~21% of "dark-voyage" vessels moving Venezuelan crude); UANI, Panama flags 17% of Iran sanctions-busting tankers (May 7, 2025) (finding nearly one-in-five Iran-trading tankers fly Panama's flag)

[236] WorldECR, "Panama tightens controls on sanctioned vessels with new legal framework" – reporting that Executive Decree No. 512, published in the Official Gazette on 18 October, enables the PMA to cancel vessel registrations that appear on sanctions lists—including those maintained by OFAC, the UN, EU, and the UK. https://www.worldecr.com/news/panama-tightens-controls-on-sanctioned-vessels-with-new-legal-framework/

owners listed by sanctions imposed by international, regional, and national organisations and bodies—including the U.S. Office of Foreign Assets Control (OFAC), the UN Security Council, the EU's Consolidated Financial Sanctions List, and the UK's Financial Sanctions Targets List.[237] In a concrete step under this decree, Panama initiated the deregistration of six Panamanian-flagged vessels listed on the UK sanctions list on 20 November 2023.[238] More broadly, as of March 2025, the PMA had deregistered 107 vessels under the decree, with an additional 18 cases underway.[239] These actions mark a significant shift toward proactive compliance with global sanctions regimes, though they also underline the need for ongoing enhancement of vetting processes, flag-state cooperation, and transparency measures to ensure the register cannot be exploited for sanctions evasion.[240]

viii) Conclusion

The Panama Registry maintains a dominant position in global maritime trade. Panama's position in the global maritime industry presents a complex picture of both significant strengths and notable challenges. As the world's largest ship register, accounting for over 8,300 vessels and approximately 16% of the global fleet by deadweight tonnage, Panama has established itself as a crucial player in international shipping. Despite a steady growth in absolute numbers, the declining share of global fleet value (from 14.23% in 2019 to 12.75% in 2024) suggests growing competitive pressures.

From a regulatory perspective, Panama's performance presents mixed results. With a regulatory index of 0.439, it falls below both the EU average (0.514) and its main FOC competitors, Liberia (0.545) and the Marshall Islands (0.481). While Panama has ratified most major IMO instruments, its absence from key agreements such as the Cape Town Agreement 2012 and OPRC/HNS 2000 indicates room for improvement. The registers "Grey List" status under the Paris and Tokyo PSC regimes further emphasises the need to strengthen flag State control mechanisms.

Panama's ship registry operates under a legal framework that outlines formal requirements to establish a "genuine link" between vessels and the flag State. While questions remain about the substantive enforcement of this link, the register continues to attract a large number of international operators due to its

[237] See Panama issues decree for immediate cancellation of sanctioned vessels - https://www.seatrade-maritime.com/regulations/panama-issues-decree-for-immediate-cancellation-of-sanctioned-vessels

[238] See Panama begins canceling registration of six UK-sanctioned vessels - https://www.reuters.com/world/panama-begins-canceling-registration-six-uk-sanctioned-vessels-2024-11-29

[239] See Panama Deregisters 107 Sanctioned Ships from Registry - https://www.maritimebell.com/panama-deregisters-107-sanctioned-ships-from-registry

[240] See Panama removes over 650 ships from registry amid sanctions, stricter rules - https://www.reuters.com/world/americas/panama-removes-over-650-ships-registry-amid-sanctions-stricter-rules-2025-06-02/

global recognition, competitive fee structure, and administrative efficiency. These features not only offer financial advantages to shipowners but also enhance Panama's influence in international maritime forums such as the IMO. Although the Panama Papers scandal significantly impacted the country's reputation by exposing the misuse of its corporate and financial structures, recent regulatory reforms indicate Panama's increasing willingness to improve alignment with international transparency and compliance standards.

6.6. Vanuatu

Vanuatu, an archipelagic Small Island Developing State (SIDS)[241] in the South Pacific, has a limited maritime economy primarily reliant on agriculture, tourism, and foreign aid. Unlike the Marshall Islands, which has developed a globally significant open registry, Vanuatu's register is still growing (see Table 20), and its PSC performance is poor.

Vanuatu's domestic maritime infrastructure is limited, Vanuatu's register attracts shipowners by offering low fees, minimal inspection regimes, and flexible labour standards.

Ship registration fees and related services are a source of foreign revenue for the Vanuatu government, but official data on the contribution to GDP is scarce. The estimated revenue from the register is close to US$600,000. Considering the GDP is US$1.1bn,[242] this sum is approximately 0.6% of Vanuatu's GDP. Table 20 indicates the growth of the register.

[241] The term Small Island Developing States (SIDS) refers to a distinct group of developing countries that are small island nations facing unique sustainable development challenges, including limited resources, vulnerability to external shocks, dependence on international trade, and heightened exposure to the impacts of climate change and natural disasters. The United Nations recognises SIDS as a special case for both environmental and developmental considerations. See: United Nations, About Small Island Developing States (SIDS), https://www.un.org/ohrlls/content/about-small-island-developing-states

[242] World Bank. (2023). GDP per capita (current US$) – Vanuatu. World Development Indicators. Retrieved June 2025, from World Bank database: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=VU

Vanuatu	2019	2020	2021	2022	2023	2024
Percentage of global fleet value	0.25	0.19	0.15	0.11	0.15	0.17
Number of ships	347	327	307	327	338	348
Gross Tonnage	1,610	1,432	1,368	1,323	1,206	1,268
Dead weight tons in thousands	2,098	1,866	1,813	1,737	1,507	1,569
Percentage of total world	0.105	0.090	0.085	0.079	0.066	0.067
Average age of vessels (years)	19	20	22	24	25	25

Table 20: Analysis of the Vanuatu fleet[243]

i) Implementation of core international instruments

Vanuatu scores 0.515 on the ratification index developed for this study.[162] It should be noted that the EU average is 0,514. However, instruments such as STCW-F and HKC, which signal higher commitment, have not yet been ratified.

Moreover, Vanuatu's flag has been associated with high detention rates in PSC regimes. Under the Tokyo MoU, Vanuatu appears on the Black List, indicating a higher risk of substandard ships. Similarly, under the Paris MoU, historical data has shown Vanuatu on the Black List, reflecting concerns over compliance.

ii) Registration terms and fees

The Maritime Act of Vanuatu[244] provides the legal foundation for ship registration, vessel ownership, and maritime mortgages, mirroring many aspects of common law jurisdictions.[245] The Act establishes the role of the Maritime Administrator and the Deputy Commissioner of Maritime Affairs**,** typically based in the U.S. (New York), who oversee the daily operations of the Vanuatu International Shipping Registry(VISR).

The key provisions are the following:

- Eligibility**:** Shipowners do not need to be Vanuatu nationals or residents. Ownership may be held through International Business Companies (IBC)[246] or other foreign entities, which raises concerns about the genuine link requirement under Article 91 of UNCLOS.

[243] Source: UNCTAD.

[244] LAWS OF THE REPUBLIC OF VANUATU CHAPTER 131 MARITIME http://vanuatuships.com/downloads/Mari-Act.pdf

[245] See VANUATU MARITIME AUTHORITY ACT NO. 29 OF 1998 https://mipu.gov.vu/images/MIPU_Documents/VANUATU_MARITIME_AUTHOURITY_ACT.pdf

[246] An International Business Company (IBC) is a type of corporate entity commonly established in offshore jurisdictions. It is typically used for international trade, asset protection, holding investments, or tax planning, and is generally restricted from conducting business within the country of incorporation.

- Mortgages and Liens**:** The Act permits the registration of mortgages over ships and specifies procedures for enforcement, making it attractive for financiers.
- Bareboat Charter Registrations**:** Dual registration is allowed, where vessels can be temporarily registered under another flag while maintaining their underlying registration in Vanuatu.

The Act, nevertheless, raises several concerns:

- Genuine Link: Article 17 of the Vanuatu Maritime Act[247] explicitly sets out the eligibility requirements for the registration of vessels, thereby embedding the notion of a genuine link through ownership or chartering ties to Vanuatu nationals. Specifically, Article 17(1)(a) provide that vessels engaged in foreign trade or used exclusively for pleasure must be owned by a citizen or national of Vanuatu, while Article 17(1)(c) extends eligibility to vessels on bareboat charter to such nationals—thus reinforcing the requirement of a legal and economic connection between the flag State and the ship. Nevertheless, this genuine link requirement is substantially weakened by the exceptional waiver powers contained in Article 17 (4), which allows the Commissioner or Deputy Commissioner to register vessels exceeding the statutory age limit or, more critically, to dispense with the ownership requirement altogether where a “genuine need” is demonstrated. In practice, these provisions grant the Administrator a near-unfettered discretion to bypass the very criterion that Article 17 purports to establish, effectively transforming the genuine link into a flexible and negotiable standard. Consequently, while Vanuatu formally incorporates the principle of genuine link into its domestic legislation, the expansive waiver authority under Article 17 undermines its substantive application, aligning the regime more closely with the permissive practices of open registers than with the structures envisaged under international law.
- Regulatory Oversight: While the Act gives the register autonomy and legal robustness for commercial operations, critics argue that oversight remains minimal, especially regarding vessel inspections, sanctions compliance, and beneficial ownership transparency.

The register offers online registration, electronic certification, and competitive fees. However, it has faced scrutiny for registering oil rigs and offshore vessels, which some view as conflicting with Vanuatu's climate advocacy. Vanuatu offers competitive registration fees in comparison with national registers and even some major FOC:

- Registration Fee: US$0.35 per net ton.

[247] Article 17 (4) (Maritime Act, Chapter 131) "Anything in this section to the contrary notwithstanding, the ownership requirement referred to in subsection (1)(a) may in exceptional cases be waived by the Commissioner or Deputy Commissioner where – (a) the vessel meets all other requirements for registration; and (b) it has been satisfactorily demonstrated that there is an absolute and genuine need for such waiver."

- Bareboat Certificate of Registration: US$200.
- Temporary Radio License: US$100.
- Ship Radio Station License (valid for 4 years): US$300

While specific revenue figures are not publicly disclosed, the register contributes to Vanuatu's economy through fees and related services. However, the exact financial impact remains unclear.

iii) Safety and Labour Standards

Vanuatu's maritime administration has long been associated with serious compliance concerns, particularly in the areas of vessel safety, labour standards, and flag State performance. According to the 2023 Paris MoU report, Vanuatu-flagged vessels were inspected 353 times, with 50 detentions, resulting in a high detention rate well above the MoU average. The detention rate of 2023 was higher than of 2022. This places Vanuatu firmly on the Paris MoU's black list, reflecting persistent deficiencies in oversight and enforcement.[248]

Similar concerns have been echoed by the Tokyo MoU, where Vanuatu has also ranked poorly in terms of Port State Control (PSC) performance, with high levels of detainable deficiencies (11%) and inspections indicating substandard vessel conditions.[249] Additionally, international reports have highlighted cases of seafarer abandonment under the Vanuatu flag[250] as well as frequent violations of international maritime labour conventions (see Figure 26).

iv) Environmental Protection

There is documented weak oversight regarding Vanuatu-registered vessels' environmental practices, and oil spills or dumping incidents have been noted in Pacific regional waters.[251]

Vanuatu-flagged vessels have occasionally been linked to environmental mishaps in Pacific waters, raising concerns about weak maritime environmental oversight. As of October 2023, Vanuatu had become the world's sixth-largest flag state for offshore oil rigs and support vessels, including operations in sensitive regions such as the Gulf of Mexico and North Sea. Critics argue this creates potential for lax environmental enforcement and undermines Vanuatu's global

[248] Paris MOU 2024 Report, p21 https://parismou.org/2025/07/2024-paris-mou-annual-report-progress-and-performance-highlights-paris-mou-2024

[249] Tokyo MOU 2024 Report, p.16, Fig. 5 https://www.tokyo-mou.org/wp/wp-content/uploads/ANN24-1.pdf

[250] See 2024 Worst rear for Seafarer Abandonment - https://www.itfseafarers.org/en/news/2024-worst-year-record-seafarer-abandonment-says-itf

[251] A reported oil spill near Ifira Wharf in Port Vila (May 2025) raised serious environmental concerns and spurred public calls for better infrastructure—implying shortcomings in environmental safeguards or spill prevention measures. https://vbtc.vu/oil-spill-off-ifira-wharf-sparks-environmental-concerns-and-calls-for-slipway-development/

role in climate advocacy.[252] Similar cases are regularly reported in the international press.

It can be noted that Vanuatu flag is not used to re-flag end-of-life vessels.

v) Fisheries

In 2012, Vanuatu was issued a yellow card by the European Commission under the IUU Regulation, pre-identifying it as a non-cooperating country due to shortcomings in its control and oversight as a flag State.[253] The concerns focused on insufficient monitoring of fishing vessels flying the Vanuatu flag and inadequate enforcement measures to prevent IUU fishing.

In response, Vanuatu undertook a series of reforms to strengthen compliance with international fisheries obligations:

- Fisheries Act No. 10 of 2014 (and subsequent amendments): mandated vessel monitoring systems (VMS) on all Vanuatu-flagged and foreign fishing vessels operating in its EEZ.
- Monitoring, Control, and Surveillance (MCS) Plan: introduced observer programmes, licensing reforms, and stricter penalties for IUU activities.
- National Plan of Action to Prevent, Deter and Eliminate IUU Fishing (NPOA–IUU): aligned national measures with international best practices and FAO guidelines.
- Improved flag State oversight: enhanced inspection and reporting requirements for Vanuatu-flagged distant water fishing vessels.

These reforms addressed the EU's concerns, leading to the lifting of the yellow card in 2014. The measures illustrate Vanuatu's effort to demonstrate effective flag State control in line with its international obligations under the FAO Compliance Agreement, the Port State Measures Agreement, and RFMO frameworks.

Despite these advancements, Vanuatu's open register continues to present challenges:

- In March 2025, local authorities confirmed that several Vanuatu-flagged vessels were implicated in IUU fishing within Argentina's Exclusive

[252] See End the licences': Vanuatu oil rig registry sparks concern amid climate advocacy- https://www.theguardian.com/world/2023/oct/03/end-the-licences-vanuatu-oil-rig-registry-sparks-concern-amid-climate-advocacy

[253] Commission Decision of 15 November 2012 on notifying the third countries that the Commission considers as possible of being identified as non-cooperating third countries pursuant to Council Regulation (EC) No 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing - https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2012.354.01.0001.01.ENG

Economic Zone (EEZ), prompting renewed investigations and enforcement actions by Vanuatu's authorities.[254]

- These incidents underscore persistent oversight vulnerabilities, particularly regarding Vanuatu's open register and the potential for its flag to be used by foreign operators with limited ties to the country.

Vanuatu's experience with the EU IUU Regulation demonstrates both the effectiveness of the EU's market-based compliance mechanisms and the ongoing challenges faced by flag states with open registers. While Vanuatu has made substantial progress in aligning its fisheries governance with EU and international standards, recent IUU allegations highlight the need for sustained vigilance, robust enforcement, and transparency to maintain compliance and market access.[255]

vi) Taxation and Market Fairness

Vanuatu promotes a "competitive advantage" that attracts shipowners seeking to reduce operating expenses and tax liabilities. However, this competitive appeal has not come without significant challenges and scrutiny, particularly from international regulatory bodies and financial watchdogs. One of the most prominent concerns arises from Vanuatu's status in relation to the Financial Action Task Force (FATF), the global standard-setter for combating money laundering, terrorist financing, and proliferation financing.[256]

Vanuatu has faced criticism and increased international pressure due to deficiencies in its anti-money laundering (AML) and counter-terrorism financing (CTF) frameworks.[257] The country's open register, by design, attracts international clients who may prefer anonymity or less regulatory oversight. While this is beneficial from a cost-saving perspective, it also increases the risk that the register will be exploited for illicit activities such as money laundering, tax evasion, and even sanctions evasion.

[254] See - Media Reports on IUU Fishing Allegations : https://pmo.gov.vu/en/public-information/press-release/1097-media-reports-on-iuu-fishing-allegations.html

[255] NOAA's 2023 "Report to Congress on Improving International Fisheries Management" identified Vanuatu for failing to comply with conservation and reporting requirements under CCAMLR and IATTC, with plans to link Vanuatu's 2025 certification to corrective action. https://www.fisheries.noaa.gov/s3/2023-08/2023RTC-ImprovingIFManagement.pdf

[256] The FATF maintains a dedicated page for Vanuatu, detailing the country's progress in addressing deficiencies in its AML/CFT systems; see https://www.fatf-gafi.org/en/countries/detail/Vanuatu.html

[257] Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) frameworks refer to the set of laws, regulations, and institutional measures designed to prevent the use of financial systems for laundering illicit funds or financing terrorist activities. These frameworks typically include customer due diligence (CDD), reporting of suspicious transactions, record-keeping obligations, regulatory oversight, and international cooperation, in line with global standards such as those issued by the Financial Action Task Force (FATF).

In past FATF evaluations, Vanuatu was identified as having strategic deficiencies in its AML/CFT regime, leading to enhanced monitoring by FATF and regional bodies. These deficiencies included weak customer due diligence, limited transparency over beneficial ownership, and inadequate regulatory supervision. Such weaknesses can inadvertently make Vanuatu's register vulnerable to misuse by owners or operators seeking to conceal the true origins of funds or evade legal scrutiny. In June 2018, Vanuatu was officially removed from the FATF Grey List after demonstrating significant progress in addressing AML/CFT deficiencies.[258] Despite its removal from the FATF Grey List, Vanuatu remains on the EU's list of high-risk third countries. This inclusion is attributed to concerns over tax transparency, offshore structures, and the sale of citizenship programs, which may pose risks related to money laundering and terrorist financing.[259]

The regulatory vulnerabilities linked to the register impact Vanuatu's reputation internationally. Ports and maritime authorities worldwide increasingly conduct rigorous inspections and due diligence, often scrutinising vessels flying FOC like Vanuatu's. Ships registered under jurisdictions flagged for AML concerns may face delays, restrictions, or reputational damage, potentially offsetting some of the cost advantages initially sought by shipowners.

Moreover, international pressure and potential sanctions risks compel Vanuatu to strengthen its regulatory framework. This means that while the register currently benefits from relatively lax regulations, ongoing reforms are necessary to meet international standards. Failure to do so risks being blacklisted or grey-listed by FATF, which could deter legitimate shipowners and reduce register revenues.

vii) Security and Supply Chains

To bypass restrictions imposed by the EU, the U.S., and other jurisdictions, ships often change their flag registration to countries with more lenient oversight, such as Vanuatu. Vanuatu-flagged vessels have been reported in multiple investigations as being involved in circumventing international sanctions, especially those targeting Iran's oil exports. This allows them to evade detection while transporting Iranian crude or refined products covertly. While Vanuatu is not explicitly named in the provided sources regarding sanctions evasion and STS transfers, the practice of flag-hopping to jurisdictions with lenient oversight, such as Vanuatu, is a known tactic among vessels attempting to circumvent sanctions.[260] The U.S. Department of the Treasury has highlighted the use of FOC, including Vanuatu, in facilitating sanctions evasion activities.

[258] See Vanuatu's removal from the FATF Grey List: a concerted country team effort : https://fca.vu/vanuatus-removal-from-the-fatf-grey-list-a-concerted-country-team-effort/

[259] See Clarifications on the inclusion of Vanuatu on EU financial blacklists: https://fca.vu/clarifications-on-the-inclusion-of-vanuatu-on-eu-financial-blacklists/

[260] See -Stephenson Harwood (04 Jun 2024) - Sanctions risk... you have been warned! https://www.stephensonharwood.com/news/sanctions-risk-in-the-maritime-and-offshore-industries

Due to these patterns, enforcement agencies in the EU, the U.S., and allied countries have intensified efforts to monitor vessels flagged to Vanuatu. This includes tracking movements via satellite, sharing intelligence, and pushing for stronger regulatory reforms within the Vanuatu register system. In response, Vanuatu has announced strict measures regarding UBO and the continuous tracking of vessels to address sanctions evasion and STS malpractices.[261]

viii) Conclusion

Under UNCLOS, the flag State is expected to exercise effective jurisdiction and control over vessels flying its flag. However, Vanuatu's offshore register model**,** where administrative operations are outsourced and shipowners are largely foreign, limits the state's ability to enforce safety, labour, or environmental standards directly. This weakens oversight and complicates PSC enforcement.

The Vanuatu register exemplifies the persistent challenges posed by open registers to the international maritime governance framework. By offering competitive registration fees, minimal inspection regimes, and flexible labour standards, Vanuatu has successfully attracted a diverse range of shipowners. However, this commercial success has come at the cost of regulatory robustness. Despite Vanuatu's formal ratification of key IMO and ILO conventions, enforcement deficiencies have been consistently highlighted, as evidenced by its frequent presence on the Tokyo and Paris MoU Black Lists.

Moreover, associations with practices such as seafarer abandonment, shadow fleet operations, and potential money laundering raise significant ethical and legal questions. The case of Vanuatu clearly illustrates the tension between maintaining market attractiveness through leniency and meeting rising global expectations for safety, environmental stewardship, and labour protections.

[261] See Media Reports on IUU Fishing Allegations: https://pmo.gov.vu/en/public-information/press-release/1097-media-reports-on-iuu-fishing-allegations.html

7. Conclusion

The analysis of global demand and supply dynamics for open registers used as FOC reveals clear trends across maritime sectors, although with some sectoral variations. A limited number of flag States dominate, reflecting a concentration of register operators.

The top 35 flag states account for 94.1% of global deadweight tonnage, often involving developing nations with limited or no national ownership, raising concerns about the long-term sustainability of their maritime industries. Among these, Panama (12.9%), Liberia (11.8%), and the Marshall Islands (11.4%) lead as the largest FOC in terms of the fleet's overall value. In 2022, Liberia overtook Panama in total deadweight capacity, although Panama remains dominant in vessel count and commercial value. This shift underscores an evolving dynamic in flag state preferences within the global maritime industry.

Shipowners increasingly opt for open registers, showing a distinct preference for foreign flags. This is to be seen against the backdrop that the anticipated growth in cargo fleets (with European and Asian interests dominating) is significant, cruise ship size and asset value are also rising, and these three countries are also predominant in the newbuilding markets.

The analysis of PSC records highlights significant inconsistencies in global data collection on safety and environmental deficiencies, as well as the prominent presence of FOC states, particularly in relation to safety issues. A considerable share of these deficiencies is attributed to Panama-flagged vessels, but also Togo, Comoros, Palau, Moldova and Vanuatu.

Seafarers face persistent social and labour challenges, particularly under FOC, which often lack effective oversight. In the cruise sector, issues include job insecurity, long hours, and mental health stress. In the fishing sector, safety risks, poor living conditions, and forced labour are prevalent. Two issues are particularly linked to FOC. Regarding abandonment, 79.5% of cases have been linked to FOC such as Panama, Palau, Tanzania, Togo, St. Kitts, Liberia, and Cameroon, where Liberia and Togo have the highest number of unresolved cases. Vessels registered under open registers - notably the Marshall Islands, Liberia and Panama – are also the targets of piracy attacks and/or armed robbery because these ships frequently offer limited protection and security measures.

Finally, the "shadow fleet," mainly comprised of older vessels, frequently employs FOC to obscure ownership and evade sanctions, leveraging the lax regulatory oversight and minimal transparency these registers offer. Coupled with deceptive tactics like AIS spoofing, where false location data is transmitted, and "going dark" by disabling AIS altogether, these vessels create significant challenges for tracking and enforcement.

The analysis of market dynamics and business models for open registers has revealed their central role within the entire value chain. Figure 31 above and Table 21 provide summaries of the roles of the key actors. Section 10 of the Annex provides a detailed overview of the business models of these actors.

Shipowners occupy a pivotal position within the shipping industry, with a priority on revenue generation through vessel investments and operations management. Open registers face an inherent tension between their offer of attractive financial and commercial services to shipowners and the need to ensure regulatory compliance expected by many actors in the value chain. Financially, open registers generate substantial revenue, estimated at around US$120 M, and the top five FOC - Liberia, Panama, Marshall Islands, Bahamas, and Bermuda - account for around 41% of this estimated market revenue.

The concentration of market power among a few FOC, primarily operated by private entities, creates a challenging landscape for national registers. A comparison between FOC and national registers highlights the intense competition stemming from the uneven ship registration requirements and commercial practices of FOC. These registers attract shipowners by offering weak genuine links to the Flag State, coupled with direct and indirect financial incentives, such as lower taxes and reduced operational costs.

In contrast, national registers emphasise safety, environmental protection, and alignment with national interests. FOC prioritise commercial considerations, providing shipowners with a more flexible and cost-effective alternative. The decision between the two often hinges on the specific needs and priorities of the shipowner, such as cost efficiency, regulatory compliance, or alignment with strategic national objectives.

A. Private Business			
Shipowner	Individuals, companies, or private entities that own the asset (vessel) used for commercial shipping, fishing, or recreation. Primary role is to manage and operate ships for transporting goods, passengers, or other specialised services.	Cargo owner/ charterer	Individuals or companies that own the goods being transported. May engage a charterer or a freight forwarder to arrange the transportation of goods. Charterers are individuals, companies, or organisations that hire or lease a vessel from the shipowner for a specific period or voyage.
Ship manager	Ship managers are responsible for the overall management and operation of vessels on behalf of the vessel owners. Vessel operators are entities directly involved in operating vessels, and they may also own the vessels or only charter them. Third-party managers are independent entities that are hired by vessel owners or operators to handle specific aspects of vessel management.	Private entity operating Open Register	A private entity in the form of specialised maritime register firm that operates a ship corporate register and has a relationship with the FS maritime authority. They manage registers for ships often in jurisdictions that offer lenient regulatory frameworks. They typically establish laws and regulations, allowing shipowners to register their ships in a country different from their country of origin.
Recruitment and Placement Service Provider (RPS)[262]	RPS is any private person, company or other engaged in recruiting seafarers on behalf of shipowners including manning agencies, crewing and ship management companies.	Protection and Indemnity Club	Protection and Indemnity (P&I) Clubs are mutual insurance clubs that provide liability coverage and third-party claims that may arise from shipping.
Financial Institution/ Funding	Entities engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, offering equity and debt financing services; may include banks, credit unions, specialised or government lenders, investors and other types of institutions interested in ship funding.	Hull and Machinery insurance firm	Hull and Machinery (H&M) is the second largest type of marine insurance, covering physical loss or damage to a vessel's hull (the body of a ship) and the machinery on board. Their primary role is to assess risks, underwrite policies and provide coverage against potential financial losses.
Classification Society	Independent entities who establish and maintain technical standards for ship design, construction and operation.	Private insurer	Marine insurance field involves inter alia vessels, cargo, and general liability.
Shipyard	Lead the ship design, construction and maintenance, in accordance with international maritime regulatory standards. Shipyards are essential to maintaining the safety, efficiency, and sustainability of vessels, adhering to strict international standards for design, construction, and environmental compliance. Open registers, which allow shipowners to select any shipyard globally, drive business to shipyards in countries with lower costs and flexibility.	Demolition yard	Yards where ship dismantling takes place. This actor supports local economies with numerous jobs in developing regions,[263] but compliance with safety and environmental standards remains inconsistent,[264] also because the use of FOC facilitate the circumvention of more stringent regulatory frameworks or weaken the implementation of applicable legislation.[265]

B. National Public Authorities		C. Labour (organised and non-organised)	
Flag State	The Flag State has overall responsibility for the implementation and enforcement of international maritime regulations for all ships granted the right to fly its flag.	Transport Workers' Federations	International Transport Workers' Federation (ITF) and the European arm represent the interests of all workers in the transport sector, including seafarers.
Coastal and Port State	They operate Port State Control Authorities whose role is the inspection of foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations[266] and that the ship is manned and operated in compliance with these instruments.[267] Port State Controls assess the performance and efficiency of flags[268] based on detentions applied. This dynamic condition influences shipowners to choose flags with a better compliance record.[269]	National Labourers' Unions	Maritime labour unions at national level are usually found in the major maritime labour supplying nations.
Maritime Labour Supplying State	These States promote seafaring profession among national labour to support the national shipping industry, export labour overseas and gain from the income coming from national seafarers on board foreign-flagged vessels.	Individual crew	Non-organised labour, referring to individual seafarers of different ranks and origin, demolition workers, cruise workforce (accommodation and crew), fishermen.
D. Non-Governmental Organisations			
Entities that work toward public or social welfare goals			

Table 21: Key actors in the maritime transport value chain and their role

The primary allure of FOC lies in its cost efficiencies, ease of regulatory compliance, and operational flexibility, factors that are universally attractive to various stakeholders. Shipowners value reduced fees and expedited registration processes, while labour flexibility - enabled by lenient enforcement of

[262] Recruitment and Placement Service Providers (RPS) are licensed entities or agencies that engage in the recruitment, referral, placement, or deployment of workers for local or overseas employment. They act as intermediaries between jobseekers and employers, ensuring compliance with labor laws and regulations governing employment services.

[263] ILO. (2004). Shipbreaking: Hazardous Work for Recycling.

[264] Hossain, M. S., & Roy, S. (2014). Health and Environmental Impacts of Shipbreaking in Developing Countries.

[265] Schiermeier, Q. (2021). Boom in ships that fly 'fake' flags and trash the environment. Nature, May 9. https://www.nature.com/articles/d41586-021-01391-3

[266] Fan, L., Luo M., and Yin J. (2014), Flag choice and Port State Control inspections—Empirical evidence using a simultaneous model, Transport Policy, Elsevier, vol. 35(C), pages 350-357. https://www.sciencedirect.com/journal/transport-policy

[267] Port State Control, Port State Control (imo.org) (last accessed 29/06/2024).

[268] Esma, G. and Emecen, K. Determination of maritime safety performance of Flag States based on the Port State Control inspections using TOPSIS. Marine Policy, (2022).;143:105156-105156. https://www.sciencedirect.com/journal/marine-policy/vol/140/suppl/C

[269] Winchester, N. (2003). Flags must hoist a different standard. The Sea, 165 p. 4. URL: https://orca.cardiff.ac.uk/id/eprint/167479/1/165%20sep-oct%2003%20Winchester.pdf

international standards - appeals to cost-sensitive operators. Additionally, FOC permissive tax policies and limited oversight on ownership disclosure attract market actors seeking lower fiscal burdens and anonymity. FOC often permit cost-effective hiring of international crews without adhering to the strict requirements of the MLC, 2006. Despite criticisms, these characteristics position FOC as a choice in the industry, balancing regulatory demands, cost pressures, and competitive performance.

FOC are associated with legal and structural vulnerabilities that facilitate regulatory evasion, including maritime safety and environmental laws, labour protections, and ship recycling standards. Their framework inherently enables anonymous beneficial ownership and inadequate oversight, creating opportunities for illicit activities such as smuggling, piracy, and money laundering. Rather than being explicitly designed for illegal activities, FOC permissiveness attracts such uses.

This relates closely to the concept of a "genuine link" between a vessel and its flag state. While this concept is rooted in international law, notably in Article 91 of the UNCLOS, its interpretation varies significantly among flag states, which has a substantial impact on the commercial attractiveness of FOC. However, a lenient interpretation of the "genuine link" requirement is a common feature among all FOC, which focus on administrative and economic benefits rather than substantive connections, such as national ownership, crew composition, or the vessel's operation within the flag State. In most cases, FOC do not object to registering ships that belong to shell companies, domiciled in jurisdictions with minimal regulatory oversight, allowing them to obscure ownership details. This makes it difficult to trace the UBO of these vessels. In conclusion, the divergence in interpreting the genuine link contributes significantly to the commercial attractiveness of FOC.

The role of the FOC is also crucial for many shipowners who send their end-of-life vessels for recycling. The registers of St Kitts and Nevis, Comoros and Palau, mainly but also of Togo, Tanzania, St Vincent and the Grenadines, Sierra Leone, Tuvalu, Liberia, Panama, Marshall Islands, attract a significant market share of end-of-life vessels. Although not used during the operational life of the ships, these flags are found associated with ships reaching the breaking yards in South Asia.

"Shadow fleets" under FOC often conceal operations through flag hopping and false reporting, complicating enforcement against IUU fishing and ship-recycling, sanctions evasion, and human trafficking. Thus, while they serve legitimate commercial needs, their setup enables exploitation as "means and media" for illicit activities. Reputation risks, especially those arising from targeting by PSC MoUs, impose indirect costs on private entities operating the OR, as well as on their registered ships. Vessels flagged under FOC often face heightened inspections and detention rates due to safety and labour deficiencies, which can affect their operational schedule, service reliability, and commercial

attractiveness. This indirect cost may discourage flagging under FOC with damaged reputations and influence high-value segments, such as cruise, but it is less impactful on the cargo segment, which prioritises financial savings over global reputation.

FOC operated by private companies offer shipowners several distinctive features. Financially, they offer significantly lower registration and operational costs than state-operated registers, leveraging favourable tariffs and fee structures and operating in tax regimes exempting income tax, VAT, and capital gains tax. These registers focus on profit-driven services, optimising fee structures to attract a broad client base.

Compliance avoidance is another advantage. OR, listed in the Grey list and mainly in the Black list of the Paris MOU, are not constrained by strict definitions of the genuine link. Their regulatory frameworks are typically less stringent, enabling shipowners to bypass rigorous labour, safety, or environmental standards imposed by national registers.

Operational efficiency is also a hallmark of FOC managed by private firms. They employ modern technology to streamline processes like online registration and compliance monitoring. They also provide additional services, including seafarer certification, compliance consulting, and legal support, positioning themselves as comprehensive solutions for maritime operations. They enhance their market appeal through strategic marketing and a reputation for reliability and customer service.

Revenue-sharing agreements with flag States further incentivise these registers to expand their offerings, creating a mutually beneficial relationship. In contrast, national registers may prioritise stricter compliance and alignment with state policies, which can be less appealing to shipowners focused on cost efficiency and operational flexibility.

Due to their high market shares, FOC play a pivotal, yet inconsistent, role in global maritime governance. While some FOC operate within norms and demonstrate reasonable PSC performance, others are closely associated with environmental harm, weak labour protections, and criminal practices such as money laundering and illegal fishing. However, the sectoral analysis reveals substantial differences in FOC quality and regulatory enforcement (Annex section 11.3 provides more detailed information). Indeed, while some - especially in transport and cruise sectors - are integrated into formal governance structures and maintain good compliance, others in fisheries, recycling, and safety-related operations are deeply problematic.

The maritime transport sector, dominated by FOC such as Liberia, Panama, and the Marshall Islands, exhibits generally strong PSC performance and controls a large share of the global fleet. These registers are commercially sophisticated and operate as direct competitors to national registers, offering stable services within recognised regulatory frameworks. However, their high market sensitivity

makes policy interventions challenging, as regulatory pressure may inadvertently disrupt global shipping competitiveness.

In cruise shipping, the primary flags of Bahamas, Bermuda, and Panama also enjoy positive PSC records, ensuring vessel safety and operational compliance. Nonetheless, this sector is plagued by labour and social issues, particularly affecting crew and hospitality workers, who often face poor working conditions and limited legal protections. The impact is particularly felt at the regional level, especially in the Caribbean.

The fisheries sector reveals stark deficiencies in the exercise of flag State control. Flags such as Panama and Togo are among the worst performers. These registers are associated with low PSC scores, weak transparency, and systemic ties to IUU fishing, labour abuse, and even money laundering. These practices undermine marine biodiversity and sustainable development efforts, particularly in West Africa and Southeast Asia.

Comoros and St. Vincent serve the ship recycling sector, where poor PSC performance, safety violations, and opaque operations are widespread. These registers are often used by vessels nearing decommissioning, engaging in flag hopping to evade IMO and EU standards. This segment is closely tied to environmental damage and illegal financial flows.

Sierra Leone, Comoros, and Vanuatu consistently perform at the bottom of global PSC rankings, with serious safety and pollution breaches. These registers often lack even basic oversight mechanisms, posing significant risks to crew safety, marine ecosystems, and international enforcement regimes.

Overall, the FOC practice contrasts with the key provisions of UNCLOS on flag States' rights and duties. The effective jurisdiction and control of the flag State is clearly stated in Article 91 of UNCLOS, which provides that it is the responsibility of the State to ensure that ships flying its flag comply with international regulations. The flag State has jurisdiction over the vessel and is responsible for administrative, technical, and social matters on board. The term and concept of the nationality of a vessel also introduced the requirement of registration. A ship must be registered in a flag State to be legally recognised. This registration links the ship to the State's register and places the vessel under the State's regulatory oversight.

The right of a State to register ships also implies duties and responsibilities, as per Article 94: maintaining a register of ships; ensuring that ships flying its flag are seaworthy and comply with applicable international rules and standards; conducting inspections, surveys and audits to ensure compliance with safety and environmental regulations; investigating breaches of international maritime laws by vessels flying its flag; and representing the interests of vessels registered under its flag on the international stage. This includes diplomatic and consular support for the ship and its crew.

The thorough analysis of the FOC registration requirements, the outsourcing of the national fleet register's operation to private, non-resident companies, and the means and methods of oversight of vessels by FOC States have demonstrated that FOC practices run counter to Articles 91 and 94 of UNCLOS. This has systemic consequences for EU international ocean governance objectives and relevant international frameworks, which are examined in the next Chapter.

Chapter 2 - Analysis of the effects of open registers on EU policies and international frameworks

This Chapter focuses on examining how and to what extent the findings from Chapter 1 affect the European Union's international policy objectives as well as the leading international frameworks regulating maritime activities. Following the same logic and approach, it reviews the policy objectives of the EU and relevant international frameworks, and assesses the impacts of FOC on these objectives. Impacts are evaluated not only on a sectoral basis, but also cross-sectorally. This identification of key linkages across policy fields and instruments allows for the assessment of the degree of significance of the impacts of FOC on international laws and regulations.

1. EU Policy Objectives and the impacts of FOC

The EU's international policy objectives consist of engaging with the global community to address challenges and establish leadership in all areas of maritime governance. These objectives aim to influence international agreements, promote sustainable practices worldwide, and ensure fair competition and security. They are deeply rooted in the EU's own internal policies, such as ensuring maritime safety, boosting economic competitiveness, protecting the environment, and maintaining high standards for labour and social conditions within EU waters and fleets.

This section first reviews the general and sector-specific EU objectives and instruments for maritime governance (details are provided in the Annex section 14). It then assesses the impacts of FOC, first following a sectoral approach, then in a cross-sectoral manner. It identifies the interlinkages that can explain the varying degrees of the significance of FOC impacts on EU policy objectives and instruments.

1.1. General EU Policy objectives

Several key overarching policy objectives and policy instruments apply across sectors and largely inform EU action and objectives at the international level. They are the following:

1) International Ocean Governance (IOG) is a critical framework that aims to ensure that the ocean is safe, secure, clean, healthy, and sustainably managed. The European Union's 2022 Joint Communication on IOG outlines strategic priorities to address mounting challenges, including overfishing, climate change, biodiversity loss, pollution, and geopolitical instability. These priorities are fully aligned with the United Nations Sustainable Development

Goals (SDGs)[270], especially SDG 14: Life Below Water.[271] The EU calls for stronger multilateral governance built on the UNCLOS. It supports key treaties such as the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement) and the designation of 30% of marine areas as protected by 2030. The EU also advocates for prohibiting deep-sea mining until the scientific gaps are properly filled, that it can be demonstrated that no harmful effects arise from mining and, as required under the UNCLOS, the necessary provisions in the exploitation regulations for the effective protection of the marine environment are in place.[272]

2) Promoting Fair Competition and Global Leadership: A key objective of the EU's maritime transport policy is to foster fair competition while strengthening the EU's leadership in shipping globally. This is governed by the general competition framework under Articles 101 and 102 TFEU,[273] which prohibit anticompetitive agreements and abuse of dominance, including in the maritime sector. Although Council Regulation (EEC) No 4056/86[274] has been repealed, it laid the foundation for applying competition rules to maritime transport, now integrated within broader competition law enforcement under Regulation (EC) No 1/2003:[275]

   - Maritime Safety Standards are set out in instruments such as Directive 2009/16/EC276 on Port State Control, which ensures compliance of ships

[270] The 2030 Agenda for Sustainable Development, adopted by all United Nations members in 2015, created 17 world Sustainable Development Goals. The aim of these global goals is "peace and prosperity for people and the planet" – while tackling climate change and working to preserve oceans and forests.

[271] The goal of this SDG is to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".

[272] See https://oceans-and-fisheries.ec.europa.eu/ocean/international-ocean-governance_en and in particular European Commission, & High Representative of the Union for Foreign Affairs and Security Policy. (2022, June 24). *Setting the course for a sustainable blue planet: Joint Communication on the EU's International Ocean Governance agenda* (JOIN(2022) 28 final). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=JOIN%3A2022%3A28%3AFIN

[273] "The Treaty on the Functioning of the European Union (TFEU) is one of the two primary Treaties of the EU, setting out the Union's objectives, competences, and substantive policies, including the internal market, competition law, and economic governance." Treaty on the Functioning of the European Union | EUR-Lex

[274] Council Regulation (EEC) No 4056/86 of 22 December 1986 laying down detailed rules for the application of Articles 85 and 86 of the Treaty to maritime transport Regulation - 4056/86 - EN - EUR-Lex

[275] Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty (Text with EEA relevance) Regulation - 1/2003 - EN - EUR-Lex

[276] Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control (recast) (Text with EEA relevance) Directive - 2009/16 - EN - EUR-Lex

with international safety standards, and Regulation (EC) No 725/2004[277] on enhancing ship and port facility security. These measures are supported by the European Maritime Safety Agency (EMSA), which provides technical and operational assistance.

- Crisis Management and Preparedness in the maritime domain are integrated within the broader EU Civil Protection Mechanism (Decision No 1313/2013/EU)[278], through which EMSA contributes via pollution response capacities and support in maritime emergencies.

- Environmental Protection and Decarbonisation are addressed under Regulation (EU) 2015/757[279] on the monitoring, reporting, and verification of CO_2 emissions from maritime transport. This regulation facilitates emissions tracking and digital reporting. The recently adopted FuelEU Maritime Regulation (EU) 2023/1805[280] aims to reduce the carbon intensity of shipping fuels and increase the uptake of renewable and low-carbon fuels. These instruments are integral to the EU's broader climate goals under the European Green Deal.[281]

3) Developing a safe a sustainable cruise sector: The EU has specific policy objectives related to cruise shipping that align with its broader goals of sustainability, safety and economic development:

   - Safety and security: In addition to the objectives for Maritime Transport, the Passenger Ship Safety Directive (2017/2108) ensures high safety standards by enforcing compliance with IMO guidelines and requiring regular safety inspections.

   - Consumer protection: The EU Regulation on Passenger Rights (Regulation (EU) No 1177/2010) safeguards consumer rights for transparency in pricing and service, health and safety provisions. It establishes complaint mechanisms and clear channels for dispute resolution to protect cruise passengers.

   - Sustainable tourism development: The Integrated Maritime Policy promotes responsible cruise tourism that balances economic benefits with

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[277] Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security (Text with EEA relevance) Regulation - 725/2004 - EN - EUR-Lex

[278] Decision (EU) 2023/2671 amending Decision No 1313/2013/EU to extend the rescEU transitional period – European Sources Online

[279] Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC (Text with EEA relevance) - Legislative Texts - Regulation (EU) 2015/757 - EMSA - European Maritime Safety Agency

[280] Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC (Text with EEA relevance) Regulation - 2023/1805 - EN - EUR-Lex

[281] The European Green Deal - European Commission : https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

local community and environmental needs, respecting local cultures and ecosystems, benefiting local economies and supporting local businesses and ensuring fair distribution of economic gains from cruise tourism.[282]

4) Environmental Sustainability, Biodiversity, and Marine Ecosystem Protection: The European Green Deal sets requirements for reducing pollution, emissions, and waste (including oil spills, waste disposal, and air emissions), protecting and restoring biodiversity, and achieving decarbonization of the EU by 2050. Alongside these measures, the EU IUU Regulation (Council Regulation (EC) No 1005/2008) provides a comprehensive framework to prevent, deter, and eliminate illegal, unreported, and unregulated fishing, thereby safeguarding marine ecosystems and supporting the EU's broader sustainability and biodiversity objectives. Key measures are:

   - Marine Strategy Framework Directive (MSFD) (Directive 2008/56/EC): Establishes a framework for achieving Good Environmental Status (GES) of EU waters through an ecosystem-based approach. It defines 11 qualitative descriptors of GES and sets out coordinated actions at the international level to address environmental, fisheries, and climate-related challenges.

   - Habitats Directive (Directive 92/43/EEC): Contributes to marine biodiversity protection by requiring the designation and management of Marine Protected Areas (MPA) and safeguarding key habitats and species, in line with the EU Biodiversity Strategy for 2030.

   - Regulation (EU) 2024/1143**:** Supports the restoration on land and at sea, helping achieve EU water security goals and meet international biodiversity targets under the Kunming-Montreal Global Biodiversity Framework. It mandates restoration measures to return important habitats and species to good condition, while promoting sustainable development and the expansion of renewable energy.

   - The Directive on Port Reception Facilities for Ship-Generated Waste Directive (EU) 2019/883 on port reception facilities and Directive (EU)2016/802 on sulphur content in marine fuel set strict pollution control requirements for waste management and emissions, aligning with the MSFD.

   - The Ship-Source Pollution Directive (Directive 2005/35/EC, as amended by Directive 2009/123/EC) establishes penalties, including criminal sanctions, for illegal discharges of polluting substances from ships into EU

[282] Cruise lines source fresh produce, seafood, crafts, and souvenirs from local farmers, fishermen, and artisans. For example, in Alaska, many cruise companies' partner with local fishermen to supply freshly caught seafood for onboard dining. Moreover, cruise lines work with independent, locally-owned tour operators instead of large corporations. In Norway as well as in other regions, local guides lead fjord tours, ensuring revenue stays within the community. These are only some examples of support to the local economy by cruise business.

waters. It aligns EU law with MARPOL standards, strengthening enforcement against ship-source pollution through cooperation between Member States and support from EMSA.

- Specific mandates under the FuelEU Maritime Initiative support decarbonisation by incentivising the adoption of low-emission fuels and technologies.

5) Ensure sustainable fisheries management: The EU's Common Fisheries Policy (CFP), established by (Regulation (EU) No 1380/2013)[283], sets out a framework for the sustainable management of marine biological resources within EU waters, shaping both internal governance and the EU's external fisheries agreements. The CFP operationalises key principles that the EU promotes globally:

   - Sustainability and Precautionary Approach: Fish stocks must be exploited at or below levels allowing for Maximum Sustainable Yield (MSY)[284] (Article 2), in line with science-based conservation targets and the ecosystem-based approach.

   - Science-Based Management: Decision-making is guided by independent scientific advice, primarily from the Scientific, Technical and Economic Committee for Fisheries (STECF),[285] ensuring that conservation and exploitation measures are evidence-based.

   - Control and Compliance: Effective monitoring and enforcement mechanisms are laid down in the Control Regulation (Regulation (EC) No 1224/2009)[286], ensuring transparent reporting, catch traceability, and uniform inspections across Member States.

   - Combatting Illegal, Unreported and Unregulated (IUU) Fishing: Regulation (EC) No 1005/2008[287] establishes a certification, monitoring, and enforcement framework to prevent IUU products from entering the EU

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[283] Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC - Regulation - 1380/2013 - EN - EUR-Lex .

[284] Maximum Sustainable Yield (MSY) refers to the largest long-term average catch or yield that can be continuously taken from a fish stock (or other renewable natural resource) under prevailing environmental conditions without depleting the resource.

[285] The Scientific, Technical and Economic Committee for Fisheries (STECF) is a permanent advisory body of the European Commission that provides independent scientific advice on fisheries management, including biological, economic, environmental, and social aspects, to support the implementation of the EU's Common Fisheries Policy (CFP).

[286] Regulation (EC) No 1224/2009 establishes a system for the control, inspection and enforcement by national authorities of the rules of the European Union's (EU) common fisheries policy (CFP) - https://eur-lex.europa.eu/legal

[287] Council Regulation (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing, : https://eur-lex.europa.eu/eli/reg/2008/1005/oj/eng

market, requiring catch certificates, third-country cooperation, and trade measures to ensure legality and sustainability of imports.

- Landing Obligation: To reduce discards and improve stock assessment, the CFP mandates that all catches of regulated species be landed (Article 15).

- Conservation Measures: The Technical Measures Regulation (Regulation (EU) 2019/1241)[288] sets out gear requirements, area/time-based restrictions, and bycatch reduction rules to protect habitats and species.

- Market Transparency and Traceability: The Common Market Organisation (CMO) for fishery products ([Regulation (EU) No 1379/2013][289] ensures product labelling with origin, production method, and catch zone information, supporting informed consumer choice and traceable supply chains.

- Marine Biodiversity Protection: The CFP complements environmental obligations under the Habitats Directive by encouraging the use of MPA and fishing restrictions to preserve vulnerable marine ecosystems.

6) Improving working conditions and social rights for seafarers: the EU has established a comprehensive framework to address labour issues in its Member States. It focuses on improving working conditions, protecting workers' rights and promoting fair labour practices in various industries, including maritime shipping. Key measures:

   - The fundamental rights and principles set out in the EU Charter of Fundamental Rights[290] provide in its Article 31 that all workers have the right to healthy, safe and dignified working conditions, to a limit on their maximum working time and to weekly and daily rest periods and an annual period of paid leave.

   - The EU social agenda for maritime transport focuses on ensuring decent working conditions, fair wages, social protection and training for seafarers. It ensures access to social security and protection measures for seafarers working across Member States, ensuring access to essential healthcare and unemployment support.

   - Strengthening Dialogue and Cooperation through the European Sectoral Social Dialogue Committee for Maritime Transport. It promotes dialogue

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[288] Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures: Regulation - 2019/1241 - EN - EUR-Lex

[289] Regulation (EU) No 1379/2013 of the European Parliament and of the Council of 11 December 2013 on the common organisation of the markets in fishery and aquaculture products : Regulation - 1379/2013 - EN - EUR-Lex

[290] The Charter of Fundamental Rights of the European Union sets out the civil, political, economic and social rights of EU citizens and residents, and has the same legal value as the EU treaties. https://eur-lex.europa.eu/eli/treaty/char_2012/oj/eng

between maritime unions, employers and the EU, addressing issues affecting workers' rights and working conditions.

7) Enhancing Maritime Security: the Common Security and Defence Policy (CSDP), a central pillar of the European Union's Common Foreign and Security Policy (CFSP), has implemented numerous operations to ensure peace, stability, and security. More broadly, the EU Maritime Security Strategy (EUMSS) provides a comprehensive framework to address evolving maritime threats, including piracy, trafficking, terrorism, and cyberattacks.
8) Operations such as EUNAVFOR MED Sophia/Irini and EUNAVFOR Atalanta (European Union Naval Force Somalia - Operation Atalanta) stand out as key CSDP operations, as they combat piracy off the coast of Somalia, protect World Food Programme (WFP) shipments, and safeguard international shipping in the region.
9) The EUMSS and its Action Plan strengthen coordination among EU Member States, enhance maritime situational awareness, and protect critical infrastructure. EUMSS promotes international cooperation and supports a rules-based global maritime order as reflected in UNCLOS. By safeguarding sea lines of communication and ensuring the security of maritime domains, the strategy plays a crucial role in protecting the EU's global maritime interests and maintaining international peace and stability. Key measures include integrated surveillance and civil-military cooperation, combating piracy, trafficking and illegal fishing, protecting critical maritime infrastructure, and strengthening cybersecurity, with a focus on coordinated EU action and international partnerships to address evolving maritime threats.

1.2. Sector-specific EU objectives

The following sections investigate specific sectors where the EU promotes its values and principles at the international level and implements its international commitments, often exceeding international standards. Primary EU policy instruments are listed in section 1.3 in this Chapter, and relevant international policy objectives and frameworks are presented in detail in Annex sections 14 and 15.

1.2.1. Maritime Transport

The EU has developed a comprehensive framework for maritime safety and environmental protection for the shipping industry. The main policy objectives of the EU maritime safety and environmental regime include:

1) Supporting global governance and international cooperation: Enhance international cooperation for a sustainable and fair global shipping framework. The EU actively engages in international maritime policymaking through organisations such as the IMO and contributes to global efforts to enhance maritime safety, security, and environmental sustainability.

2) Ensuring Maritime Safety: Enhancing safety standards in maritime transport and protecting lives at sea. Key measures:

   - Establish and enforce high safety standards for vessels operating in EU waters, including compliance with international conventions such as the Safety of Life At Sea Convention (SOLAS) and the International Conventions on Standards of Training, Certification, and Watchkeeping for Seafarers and Fishing Vessel Personnel (STCW and STCW-F). EU Regulation (EC) No 336/2006 on the implementation of the International Safety Management (ISM) Code requires vessels to adhere to rigorous safety and management standards, thereby reinforcing the SOLAS and STCW Conventions within EU waters.

   - The Port State Control Directive ensures that ships operating in EU waters comply with international safety standards.

   - The International Convention on Maritime Search and Rescue (SAR)[291] emphasises cooperation among states to conduct coordinated rescue operations during maritime emergencies. This ensures optimal coverage of search areas and resource utilisation. Developing standardised procedures across Member States allows for a unified response to maritime crises. This includes establishing command centres and aligning emergency response plans under international frameworks, such as the IMO and EU initiatives.

3) In the EU policy, dark shipping is addressed in Regulation 833/2014.[292] The Regulation addresses the issue of dark shipping by explicitly prohibiting practices intended to circumvent sanctions, including the disabling or manipulation of AIS. This measure is particularly significant in the context of enforcing sanctions on Russian oil. By targeting concealment tactics, the regulation enhances legal enforcement, promotes maritime transparency, and strengthens the EU's commitment to a rules-based international maritime order.

1.2.2. Fisheries

The 2011 Communication on the External Dimension of the CFP and the external policy chapter in the CFP Regulation highlight the EU's commitment to extending the CFP principles beyond its waters. This involves advocating for stronger international rules on vessel registration and accountability to curb the use of FOC, which often enable regulatory evasion and IUU fishing activities. By

[291] The International Convention on Maritime Search and Rescue (SAR), adopted in 1979, sets out global rules and cooperation measures to ensure that people in distress at sea are promptly rescued and given assistance.

[292] Council Regulation (EU) No 833/2014 includes measures targeting ships engaged in illicit activities like circumventing sanctions, including the disabling of AIS systems or unauthorised ship-to-ship transfers, often associated with the dark fleet. The EU aims at preventing such vessels from accessing EU ports. See - https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52023PC0663

fostering partnerships with third countries, supporting RFMO, and promoting science-based decision-making, the EU ensures that its fisheries agreements and collaborations reflect the CFP core tenets, contributing to equitable and sustainable global fisheries governance. More concretely:

1) EU regulation 2017/2403 (SMEFF Regulation)[293] establishes a framework to ensure that EU vessels operating outside EU waters and non-EU vessels operating in EU waters do so sustainably and lawfully. To deter vessels from evading regulations through reflagging, the SMEFF Regulation imposes strict conditions on vessels that have changed their flag. Vessels that have been reflagged to a non-EU country and seek to return to the EU register must demonstrate fishing activities while flying the flag of another state.

2) Sustainable Fisheries Partnership Agreements (SFPA)[294] promote sustainable fishing aligned with SDG 14, support local economies through financial compensation and technical assistance, and foster responsible fisheries governance by improving data collection, stock monitoring, and reducing IUU fishing. These long-term partnerships ensure mutual benefits while preserving fish stocks for future generations.

3) Effective governance requires regional and international collaboration, with the EU playing a key role in managing shared marine resources through RFMO and multilateral agreements. RFMO are international bodies responsible for the conservation and management of fishery resources in areas beyond national jurisdiction.

4) Combatting IUU fishing: the EU implements a zero tolerance policy against IUU fishing with the aim to prevent, deter and eliminate IUU fishing and all trade of fishery products into the EU deriving from IUU fishing. The main objective of the IUU regulation is to prevent the entry of products stemming from IUU fishing into the EU market through a compulsory catch certification scheme. It also enables the pre-identification and the identification of non-cooperative countries and the implementation of trade-restrictive measures in the event of non-cooperation in the fight against IUU fishing.

5) Monitoring, Control, and Surveillance: the EU fisheries control system aims to ensure effective enforcement of fisheries regulations with harmonised rules on control, monitoring and inspection of the EU fleet (within and outside the EU), advanced monitoring systems, onboard observers, and coordination by the EFCA. The EU utilises advanced monitoring, control, and surveillance systems to enforce compliance with fisheries regulations. This includes the use of compulsory electronic logbooks, vessel monitoring systems (VMS), onboard observers, satellite tracking, and inspections at sea and in ports. The

[293] Regulation (EU) 2017/2403 of the European Parliament and of the Council of 12 December 2017 on the sustainable management of external fishing fleets (SMEFF Regulation): Regulation - 2017/2403 - EN - EUR-Lex

[294] Sustainable Fisheries Partnership Agreements (SFPAs) are agreements between the EU and non-EU countries that allow EU vessels to fish in the partner country's waters, while supporting sustainable fishing practices and local development.

European Fisheries Control Agency (EFCA)[295] coordinates these efforts across Member States.

1.2.3. Ship Recycling

The legal status of an end-of-life vessel is complex, as it can be approached both as a waste and as a ship. The EU has put in place two complementary instruments:

1) The 2013 EU Ship Recycling Regulation (EU SRR) is the primary legislative framework for ship recycling, ensuring that EU-flagged ships are dismantled in safe and environmentally sound facilities and that hazardous materials on ships are correctly managed. Furthermore, it aims to facilitate the ratification of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. The EU Regulation's general objective is to prevent, reduce and eliminate the adverse effects on human health and the environment caused by the recycling of ships flying the flag of an EU Member State.

    - It builds on the HKC, which was adopted in 2009 and entered into force on 26 June 2025.
    - The EU SRR includes more stringent measures specific to the EU, including the obligation for shipowners of EU-flagged vessels to ensure that their ships are only recycled in facilities approved and listed by the European Commission as complying with requirements on the protection of the environment and human health.
    - Consequently, the Regulation also aims to reduce disparities in workplace health and safety and environmental standards between ship recycling facilities in the EU and those in relevant third countries, where most ship recycling activities are located.

2) The EU Regulation on the shipment of waste regulates the shipments of hazardous waste. It implements the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

    - The Regulation applies to all end-of-life vessels that do not fall within the scope of the EU Ship Recycling Regulation.
    - It includes a ban on the export of hazardous waste, including end-of-life vessels, from the EU to non-OECD countries. This ban also applies to vessels falling within the scope of the EU SRR.

[295] The European Fisheries Control Agency (EFCA), established in 2005, is an EU body that helps ensure fishing laws are applied fairly and consistently across Europe, promoting sustainable fishing and preventing illegal practices.

1.2.4. Social and Labour Conditions

The main policy objectives of the EU labour regime include:

1) Protection of workers' rights and Promotion of Decent Social and Working Conditions for Seafarers: Safeguard workers' fundamental rights, including fair treatment and protection from exploitation. Key measures:

   - The EU supports the implementation of the MLC, which sets out the minimum working and living standards for seafarers, including wages, rest periods, safety, medical care, and social protection. The MLC establishes legally binding international standards that cover key areas, including fair wages, regulated working hours, adequate rest periods, safe working conditions, access to medical care, and social protection. By embedding these standards into its legislative and enforcement mechanisms, the EU not only promotes decent working conditions across its maritime sector but also ensures a level playing field, enhances maritime safety, and strengthens the overall sustainability and competitiveness of the shipping industry.[296]

   - Directive 2009/13/EC transposes the MLC into EU law. It is pivotal in protecting the rights of maritime workers, safeguarding against unfair treatment and exploitation, and ensuring decent working conditions on board EU-flagged vessels.

   - Directive 2018/131 of 23 January 2018 implementing the Agreement concluded by the European Community Shipowners' Associations (ECSA) and the European Transport Workers' Federation (ETF) to amend Directive 2009/13/EC per the amendments of 2014 to the Maritime Labour Convention, 2006, as approved by the International Labour Conference on 11 June 2014.

   - Directive 92/29/EEC for improved medical treatment on board vessels contains provisions for the owners of fishing vessels who are obliged to ensure that their vessels carry medical supplies, ensuring maritime workers have access to essential healthcare services, including first-aid facilities

2) Ensuring compliance: Monitor and enforce labour standards for all sectors under flag and port State responsibility. Key measure:

[296] The EU works to eliminate forced labour, human trafficking, and other forms of labour exploitation in the fishing and shipping industries by supporting effective enforcement of international conventions and monitoring systems. The EU promotes regulations that improve the safety of seafarers working on fishing vessels, including measures to prevent accidents, improve working conditions, and provide access to health care. The EU advocates for policies that guarantee fair wages, reasonable working hours, and the protection of seafarers' rights, regardless of nationality, with a particular focus on vulnerable groups such as migrant workers.

- The PSC Directive (2009/16/EC) ensures inspection and enforcement of international maritime labour standards on all ships docking in EU ports, reinforcing compliance with regulations and penalising non-compliance.

3) Capacity-building and lifelong learning: Encourage skill enhancement and lifelong learning for workers. Key measure:

   - The Directive (EU) 2022/993 on the minimum level of certification and training for seafarers transposes the IMO STCW Convention, ensuring that maritime workers receive adequate training and skill development opportunities, aligning with international standards set by the IMO.[297]

1.2.5. Tax Good Governance and Money Laundering

The EU has established a series of policy instruments to address the issues of tax evasion and avoidance whilst also promoting fair taxation. These policies are aligned with broader international initiatives and have been tailored to respect the legal framework and priorities of the EU.

1) Ensuring transparency and exchange of information: Increase financial transparency and cross-border information sharing. Key measures:

   - The EU Directive on Administrative Cooperation (DAC)[298] facilitates the automatic exchange of financial information between Member States. The sixth DAC (DAC6) requires intermediaries to report potentially aggressive tax planning arrangements to tax authorities, enabling Member States to take preventative actions against tax avoidance.

     The seventh DAC (DAC7) (Council Directive (EU) 2021/514) extends tax information reporting to digital platforms and incorporates the use of digital analytics, including AI, to track tax compliance. This includes monitoring cross-border economic activity that flags of convenience may facilitate, helping tax authorities detect suspicious patterns in real-time.

   - Supporting the implementation of the OECD's Common Reporting Standard (CRS) and FATCA-style initiatives within the EU to prevent tax evasion through undisclosed offshore accounts.

   - The European Union Code of Conduct Group on Business Taxation works to identify and address harmful tax practices within and outside the EU, promoting fair tax competition and reducing inequality. By tackling harmful tax regimes, the group helps prevent a "race to the bottom" in tax rates and holds FOC jurisdictions accountable.

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[297] See Annex section 11 for the ratification of STCW-F by several Member States

[298] The EU Directive on Administrative Cooperation (DAC), first adopted as Council Directive 2011/16/EU of 15 February 2011, establishes a framework for the exchange of information between Member States' tax authorities. It has since been amended multiple times (DAC2–DAC8) to broaden its scope, including financial account reporting, cross-border tax rulings, country-by-country reporting, and the regulation of digital platforms

- The establishment of the EU Tax Dispute Resolution Mechanism, which ensures that tax disputes between EU Member States can be resolved more efficiently, particularly in cases of double taxation.

- Cross-border cooperation and Joint Tax Audits involve EU tax authorities working together on cross-border tax issues. Strengthening the role of Eurofisc, a network of liaison officials from the 27 Member States and Norway, was launched to combat cross-border VAT fraud.

2) Combating tax avoidance and base erosion: Prevent profit-shifting to low-tax jurisdictions. Key measures:

   - The Anti-Tax Avoidance Directive (ATAD)[299] includes exit taxation, interest limitation rules, controlled foreign company (CFC) rules, and hybrid mismatch arrangements. By limiting interest deductions and hybrid mismatches, these directives prevent EU-based companies from shifting profits to jurisdictions with lower tax rates.

   - The EU Code of Conduct Group on Business Taxation evaluates harmful tax practices and pressures Member States to eliminate preferential tax regimes.

   - The EU works closely with the OECD on the Base Erosion and Profit Shifting (BEPS)[300] project to curb aggressive corporate tax planning and profit shifting

   - Directive on Administrative Cooperation in Taxation (DAC6, Directive 2018/822/EU): DAC6 mandates EU intermediaries, including maritime firms using FOC, to disclose cross-border tax arrangements that could be used for tax avoidance. By increasing transparency, DAC6 deters the use of FOC as vehicles for tax avoidance, aiming to ensure that companies contribute fairly to national tax systems.

3) Addressing the use of tax havens: Discourage the use of tax havens and sanction non-cooperative jurisdictions.

   - The EU list of non-cooperative tax jurisdictions (the "EU blacklist") identifies jurisdictions that fail to meet transparency, fairness, and good governance standards.

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[299] The Anti-Tax Avoidance Directive (ATAD), adopted as Council Directive (EU) 2016/1164 of 12 July 2016, introduces harmonised anti-abuse measures across the EU, including rules on interest limitation, exit taxation, controlled foreign companies (CFC), hybrid mismatches, and a general anti-abuse rule. It was later amended by ATAD 2 (Council Directive (EU) 2017/952) to extend the hybrid mismatch rules to third-country situations.

[300] The OECD's Base Erosion and Profit Shifting (BEPS) Project, launched in 2013, seeks to counter tax avoidance exploiting gaps in international tax rules. Its 15 Actions, finalised in 2015, address issues such as transfer pricing, treaty abuse, harmful tax practices, and transparency, and are implemented through domestic laws and the Multilateral Instrument (MLI).

- Imposing restrictions or sanctions on companies and financial institutions that engage in business with listed tax havens or use them to evade taxes.
- The EU regularly reviews and updates a blacklist of non-cooperative tax jurisdictions, which includes some popular FOC countries. Vessels registered in blacklisted jurisdictions face increased scrutiny and restrictions, discouraging tax avoidance through FOC registrations.

4) Enhancing Anti-Money Laundering (AML) and Tackling Illicit Financial Flows: Combat tax evasion linked to money laundering and corruption[301]. Key measures:
   - The 5th Anti-Money Laundering Directive (5AMLD) is officially known as Directive (EU) 2018/843. It amends the earlier Directive (EU) 2015/849 to enhance the EU's framework for combating money laundering and terrorist financing.[302]
   - Creation of centralised EU beneficial ownership registers, enabling tax authorities and law enforcement agencies to identify the true owners of assets.
   - Collaboration with the Financial Action Task Force (FATF) to enhance anti-money laundering standards within the EU.

1.2.6. Sanctions Evasion

The EU utilises sanctions to achieve various objectives of its Common Foreign and Security Policy (CFSP). EU sanctions are seen as restrictive measures designed to change the behaviour of regimes, individuals or entities that threaten international peace and security. The main objectives of the EU sanctions regime include:

1) Preserving international peace and security: Sanctions are a response to conflicts that threaten regional and global peace. The EU imposes sanctions to respond to conflicts and aggression that threaten regional and global peace. These sanctions aim to compel compliance with international law and halt destabilising activities. For instance, EU sanctions against Russia

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[301] Sources: European Union Approves New Financial Crime Agency: https://www.wsj.com/articles/european-union-approves-new-financial-crime-agency-16a44882?utm and UK MPs call for transparency to help tackle tax evasion in overseas territories: https://www.ft.com/content/67eb0ce8-b83a-4e0c-a64a-dab23df2693d?utm

[302] The 5AMLD, which came into effect on January 10, 2020, introduced significant enhancements to transparency regarding the beneficial ownership of companies and trusts. Key provisions include:Public Access to Beneficial Ownership Registers: The directive mandates that EU member states establish centralised registers of beneficial ownership information for companies and certain trusts. These registers are accessible to the public, thereby increasing transparency and aiding in the detection of illicit activities. Enhanced Due Diligence Measures: Financial institutions are required to apply enhanced due diligence measures, particularly when dealing with high-risk third countries, to prevent the misuse of the financial system for money laundering or terrorist financing.

following the annexation of Crimea and later the full-scale invasion of Ukraine are intended to preserve Ukraine's territorial integrity and regional stability. Council Regulation (EU) No 833/2014, as successively modified, imposes restrictive measures with a view to increasing the costs of Russia's actions to undermine Ukraine's territorial integrity, sovereignty and independence. These include the possibility of listing vessels that support Russia's warfare against Ukraine. Such vessels can be listed based on criteria such as the transport of military equipment, the transport of stolen Ukrainian goods, including grain, their participation in the fleet transporting Russian oil under high-risk shipping practices, and their support for the exploitation or development of the Russian energy sector. Such vessels are subject to a port access ban and a prohibition to access a broad array of maritime services, and other services such as financing and financial assistance, including insurance and brokering, flag registration, technical assistance, bunkering, ship supply services, crew changes services, cargo loading and discharge services, fendering, and tug services. This means that such services cannot be provided by EU operators, in ports or outside of territorial waters. It is also prohibited to charter, operate or crew such a vessel, as well as to engage in ship-to-ship transfers or any other transfer of cargo with, or procure any services from, such a vessel. In addition, the EU imposes individual sanctions (asset freezes and prohibition to make funds available) targeting the shadow fleet ecosystem, namely on actors enabling the operation of the shadow fleet.

2) Combating terrorism: Sanctions disrupt terrorist financing and activities. The EU has specific sanctions aimed at combating terrorism, targeting individuals and entities associated with terrorist organisations such as al-Qaeda, ISIS, or Hamas. These sanctions typically include asset freezes, travel bans, and restrictions on financial transactions, which aim to disrupt terrorist financing. Council Common Position 2001/931/CFSP and Regulation (EC) No 2580/2001 focus on restricting the movement of assets, including the sale or other transfer of vessels, and logistics for terrorism-associated entities, limiting their ability to utilise flags of convenience to mask financial or logistical support channels.

3) Non-proliferation of Weapons of Mass Destruction (WMD):[303] Sanctions target activities aimed at the proliferation of WMD. Preventing the spread of WMD is a core objective of several of the EU's sanctions regimes. Sanctions are imposed on countries suspected of developing WMD, such as nuclear or chemical weapons, in violation of international agreements. For example, the EU has imposed sanctions on the DPRK[304] and Iran for their nuclear and other WMD-related programmes. Council Regulation (EU) 2017/1509 transposes relevant UN Security Council resolutions (UNSCR) regarding the DPRK and

[303] The term “weapons of mass destruction” (WMD) generally refers to nuclear, chemical, and biological weapons, as defined for instance in UN Security Council Resolution 1540 (2004).

[304] The Democratic People’s Republic of Korea (DPRK), widely known as North Korea, is a state in East Asia founded in 1948. In legal and policy contexts, including United Nations sanctions regimes, it is usually referred to by its formal name, DPRK.

imposes measures like strict inspections of cargo transported by DPRK vessels, prohibition of services (like, for example, bunkering, ship-supply, insurance services) to and a port entry bans for certain DPRK vessels, and seizure or freezing of vessels specifically designated by the UN.

4) Curbing the use of chemical weapons: Sanctions target those involved in the development and use of chemical weapons. The EU has adopted sanctions to prevent the use of chemical weapons, targeting individuals or entities involved in their development and deployment. This objective has been a response to cases such as the use of chemical weapons in Syria and the poisoning of political dissidents.

5) Protecting the integrity of international trade and financial systems: Sanctions safeguard financial systems from criminal exploitation. Sanctions are used to protect global financial systems from being exploited by criminal networks involved in arms trafficking, human trafficking, and the drug trade. These include restrictions on banking services, financial transactions, and international trade for sanctioned individuals and entities. Regulation (EU) No 2580/2001 restricts the access of those listed to vessels that could be used to facilitate financial crimes, thus curbing access to FOC by vessels owned, held or controlled by terrorist persons, groups or entities.

6) Promoting regional stability: Sanctions prevent conflicts from destabilising neighbouring regions. Sanctions are used to protect global financial systems from being exploited by criminal networks involved in arms trafficking, human trafficking, and the drug trade. These include restrictions on banking services, financial transactions, and international trade for sanctioned individuals and entities.

7) Addressing cybersecurity threats: The EU has developed sanctions targeting individuals and entities responsible for or involved in cyberattacks. These sanctions are part of a broader effort to protect critical infrastructure and promote cybersecurity. For instance, the EU has imposed sanctions on entities linked to state-sponsored cyberattacks from Russia and China. Council Regulation (EU) 2019/796 implements sanctions on individuals and entities responsible for or involved in cyber-attacks. This extends to legal and/or natural persons owning or utilising vessels potentially involved in cyber-attacks.

It should be noted that the EU has at its disposal a framework for adopting restrictive measures in response to Russia’s destabilising actions abroad. This framework allows the Union to target individuals and entities engaged in actions and policies of the Russian Federation that undermine the fundamental values of the EU and its Member States, as well as their security, independence, and territorial integrity. It also extends to activities that threaten international organisations and third countries. These measures address a broad range of hybrid threats, including the undermining of electoral processes and democratic institutions; threats against, or sabotage of, economic activities, public services, or critical infrastructure; coordinated disinformation campaigns, foreign

information manipulation and interference (FIMI); malicious cyber activities; the instrumentalisation of migrants; and other destabilising actions. Within this framework, the EU may also target tangible assets linked to Russia's activities, such as vessels.

1.3. EU policy instruments undermined by FOC practices

This section reviews the relevant EU policy instruments for each sector and explains how FOC practices undermine them. The policy objectives and legislative instruments are analysed by sector (e.g. maritime transport, fisheries, etc.), and also horizontal objectives, safety and environmental protection, and social and labour conditions, which are relevant to many sectors and must be seen through the cumulative effects of FOC. Tax good governance and sanctions evasion are specific policy objectives and, therefore, are considered "sectors" on their own. Since the analysis below is sectoral, they only appear in their respective categories.

i) Maritime Transport [MT]

Key Instruments	Policy Objectives			
	Safety and Environmental Protection	Social and Labour Conditions	Tax Good Governance	Sanctions Evasion
Erica Packages (Erica I Measures on the Safety of Seaborne Oil Trade (COM(2000) 14 final) (Erica II Second set of measures on maritime safety (COM(2000) 802 final) (Erica III Third package of legislative measures on maritime safety in the European Union)	MT1	MT2		
Regulation (EC) No 391/2009 (Classification societies)	MT3			
Directive 2009/16/EC (Port State Control Directive)	MT4	MT5		
Directive 2009/21/EC (compliance with flag State requirements)	MT6	MT7		
Directive 2008/106/EC (Minimum level of training of Seafarer)	MT8	MT9		
Council Directive (EU) 2018/131 (Incorporate the mandatory provisions of the MLC)[305]	MT10	MT11		

[305] Council Directive (EU) 2018/131 of 23 January 2018 implementing the Agreement concluded by the European Community Shipowners' Associations (ECSA) and the European Transport Workers' Federation (ETF) to amend Directive 2009/13/EC in accordance with the amendments of 2014 to the Maritime Labour Convention, 2006, as approved by the International Labour Conference on 11 June 2014 : https://eur-lex.europa.eu/eli/dir/2018/131/oj/eng

Key Instruments	Policy Objectives			
	Safety and Environmental Protection	Social and Labour Conditions	Tax Good Governance	Sanctions Evasion
Directive 2005/35/EC (Ship Source Pollution Directive)[306]	MT12			
Regulation (EU) 2015/757 (MRV Regulation on CO2 Emissions)[307]	MT13			
Directive 2002/59/EC (Vessel Traffic Monitoring and Information System – VTMIS)[308]	MT14			
Regulation (EU) No 1257/2013 (Ship Recycling Regulation)	MT15			
Directive 2013/30/EU (Safety of Offshore Oil and Gas Operations Directive)	MT16			
Directive (EU) 2019/883 (Port reception facilities for ship generated waste and cargo residues)	MT17			
Directive 2009/18/EC (Maritime Accident investigation)	MT18			
Directive 2009/20/EC (Insurance for maritime claims)	MT19			
Directive 2014/90/EU (Marine Equipment Directive)	MT20			
European Maritime Safety Agency (EMSA) Regulation (EC) No 1406/2002	MT21			
EU Green Deal	MT22			
FuelEU Maritime Initiative Regulation (EU) 2023/1805	MT23			
Sulphur Directive (Directive 2012/33/EU)	MT24			
EU Maritime Security Strategy (2014) and its Action Plan Council document 11205/14 and Council conclusions10494/186[309]	MT25			

[306] Directive 2005/35/EC of the European Parliament and of the Council of 7 September 2005 on ship-source pollution and on the introduction of penalties for infringements: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:255:0011:0021:EN:PDF

[307] Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC: https://eur-lex.europa.eu/eli/reg/2015/757/oj/eng

[308] Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC : https://eur-lex.europa.eu/eli/dir/2002/59/oj/eng

[309] JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the update of the EU Maritime Security Strategy and its Action Plan: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023JC0008

Table 22: EU International Policy Objectives - Maritime Transport

MT1 – Erica Packages: FOC_States often have lenient inspection protocols, allowing poorly maintained vessels and underqualified crews to operate with minimal oversight. Shipowners can avoid the rigorous inspections mandated under the Erica packages by choosing ports with lax inspection regimes. Additionally, FOC enable shipowners to shield themselves from liability through complex ownership structures, often involving shell companies or layers of anonymous owners across multiple jurisdictions.

Shipowners often use FOC to register older, high-polluting vessels that do not meet stringent environmental standards, thereby allowing them to bypass regulations such as the EU's Erika packages. Many such vessels are outdated and lack modern environmental safeguards, resulting in practices like illegal dumping and inadequate waste disposal. These ships frequently escape scrutiny due to weak enforcement from classification societies affiliated with FOC States, which may prioritise financial interests over environmental compliance. Furthermore, some vessels falsify safety and environmental certifications, exploiting less reputable authorities.

MT2 – Erica Packages: By employing seafarers from countries with lower labour standards, FOC-registered operators exploit regulatory gaps to offer shipowners significant financial savings. Seafarers working under these flags often receive incomplete or substandard contracts, resulting in lower wages, limited access to social protections, and restricted rights to unionise. These conditions are exacerbated by excessive workloads and manipulated records of rest hours, often falsified to appear compliant with international requirements.

MT3 – Regulation (EC) No 391/2009 (Classification societies): Vessels registered under FOC often choose less reputable classification societies that are not recognised or strictly regulated by the EU. These societies, in turn, provide certification for vessels that may not meet the rigorous safety requirements imposed by the EU or the IMO. This practice enables older or poorly maintained ships to continue operating despite significant safety deficiencies. These vessels, which might not pass inspections under more stringent classification societies, can circumvent EU regulations by securing certifications from less stringent societies under FOC jurisdictions.

MT4 – Directive 2009/16/EC (PSC Directive): FOC allow shipowners to register vessels under jurisdictions with more lenient rules than the rigorous safety requirements of Directive 2009/16/EC. Thus, FOC-flagged vessels avoid these stringent inspections, allowing them to operate with minimal maintenance and outdated safety equipment. Countries that offer FOC services often have lower inspection frequencies, contributing to the proliferation of substandard vessels. For instance, these vessels may engage in illegal oil discharge, improper waste disposal, or noncompliance with emission controls without fear of significant repercussions from their flag State. Additionally, by reflagging or "flag-hopping"

between states with minimal environmental oversight, FOC vessels can evade periodic inspections mandated by the PSC Directive. This tactic of noncompliance poses a substantial risk to marine ecosystems and contributes to air and water pollution, further exacerbating the environmental challenges faced by the global maritime sector.

MT5 – Directive 2009/16/EC (PSC Directive): Weaker oversight in their FOC States leads to substandard working conditions, including excessive working hours, inadequate rest periods, and unsafe living environments for crew members. The lack of stringent inspections and enforcement in some FOC States creates a regulatory gap that encourages labour exploitation. For instance, crew members may endure unsafe working conditions, unregulated pay scales, and poor sanitation, contrary to the Maritime Labour Convention's minimum standards for crew welfare. By flagging their vessels in FOC States, shipowners avoid the higher costs associated with compliance, passing these costs onto the workforce in the form of lower wages and deteriorating working conditions.

MT6 – Directive 2009/21/EC (compliance with flag State requirements): Less stringent regulatory oversight by FOC States leads to poorly maintained vessels, undertrained crews and neglected safety protocols and therefore circumvention of key requirements for safety management, vessel inspection, and crew competence. Ships registered under FOC frequently escape detailed scrutiny, sidestepping regular inspections and compliance checks. Furthermore, the crew aboard FOC-registered vessels often receive inadequate training, failing to meet the standards required by the directive.

MT7 – Directive 2009/21/EC (compliance with flag State requirements): FOC-registered vessels offer substandard wages far below EU minimums and enforce excessive working hours in violation of the Maritime Labour Convention. This leads to systemic exploitation. In addition, these vessels often bypass mandatory inspections for safety and environmental compliance, further compromising labour conditions. The neglect of proper safety protocols and emergency procedures increases the risk of accidents at sea, exposing crew members to unsafe work environments with inadequate legal recourse.

MT8 – Directive 2008/106/EC (Minimum level of training of Seafarer): FOC often allow shipowners to implement inadequate training programs with insufficient oversight. FOC-registered ships face weak regulatory scrutiny. This leads to the neglect of mandatory ongoing education.

MT9 – Directive 2008/106/EC (Minimum level of training of Seafarer): Under FOC regimes, ships may hire seafarers who have not received adequate safety training, FOC contribute to poor working conditions, as operators may overlook critical labour standards, including proper hours of rest, fair wages, and safe living conditions, to maximise profitability.

MT10 – Council Directive (EU) 2018/131 (Incorporating the mandatory provisions of the MLC): FOC-registered vessels fail to comply with safety requirements,

resulting in substandard safety conditions onboard. This includes inadequate lifesaving equipment, poor maintenance practices, and insufficient crew training. There are violations of MLC mandates that the EU Directive aims to enforce. Moreover, FOC-registered ships often hire low-cost labour from nations with weaker protections. This can lead to heightened fatigue among crew members, impairing their ability to respond effectively to emergencies and increasing the likelihood of accidents. Furthermore, the limited medical facilities and access to healthcare on FOC vessels also contravene the MLC requirements, exacerbating the risk to the health and safety of seafarers.

MT11 – Council Directive (EU) 2018/131 (Incorporating the mandatory provisions of the MLC, 2006): Lax regulations and/or enforcement mechanisms to implement the Maritime Labour Convention provisions often result in seafarers working under incomplete or nonstandard contracts, undermining their right to fair employment conditions, including wages, working hours, and rest periods. By exploiting jurisdictional ambiguities, FOC create significant legal barriers for seafarers attempting to report violations or claim compensation. Weaker enforcement makes it challenging for regulatory bodies to conduct thorough inspections and uphold safety and labour standards.

MT12 – Directive 2005/35/EC (Ship Source Pollution Directive): FOC-flagged ships are less frequently inspected , and many FOC jurisdictions fail to enforce international maritime conventions, such as MARPOL, allowing vessels to disregard standards on waste disposal and emissions control.

MT13 – Regulation (EU) 2015/757 (MRV Regulation on CO2 Emissions): lax regulatory oversight results in inaccurate reporting of emissions data, where ships may underreport fuel consumption or present fraudulent data, effectively hiding their true environmental impact.

MT14 – Directive 2002/59/EC (Vessel Traffic Monitoring and Information System VTMIS): FOC vessels may utilise outdated or substandard Vessel Traffic Monitoring and Information System equipment, as the jurisdictions they are registered under often have lower standards for maintenance. The weak regulatory frameworks in FOC jurisdictions also result in frequent delays or failures in sharing critical information with EU authorities, thereby impairing situational awareness and timely intervention. Additionally, FOC vessels often circumvent stringent safety regulations by switching off tracking devices. This practice enables such ships to avoid compliance with key safety regulations. As a result, the presence of FOC-flagged vessels poses significant risks to safety and environmental protection.

MT15 – Regulation (EU) No 1257/2013 (Ship Recycling Regulation): The evaluation of the Regulation published in February 2025 concludes that the Regulation has largely achieved its objectives and, notably, through the establishment of a dedicated European List of authorised ship recycling facilities, has contributed to higher environmental and social standards in ship recycling

practices. However, the evaluation also shows that the Regulation's effectiveness has been significantly undermined through the practice of shipowners changing the ship's flag from a Member State's flag to a non-EU flag shortly before recycling, which is incentivised by the additional revenue from selling end-of-life vessels to South Asian yards.

Through easy re-flagging, FOC facilitate the circumvention of the Regulation. Registering their vessels under countries with weaker regulatory frameworks enables these ships to be dismantled in third-country facilities that do not adhere to the EU's stringent environmental and safety standards. FOC exploit jurisdictions with lax regulations and enforcement, and facilities with inadequate hazardous material management. FOC enables the circumvention of EU certification and inspection protocols, which are designed to ensure compliance with safe recycling practices. Without proper oversight, these vessels can be dismantled under unsafe conditions, posing risks to both workers and the environment.

MT16 – Directive 2013/30/EU (Safety of Offshore Oil and Gas Operations Directive): FOC are subject to the safety regulations of the flag state, not those of the EU directive. The directive requires transparency in reporting safety and environmental risks. Yet, vessels under FOC might not adhere to these requirements, further hindering the directive's goal of robust risk management.

MT17 – Directive (EU) 2019/883 (Port reception facilities for ship-generated waste and cargo residues): The directive mandates that ships must use these facilities to minimise marine pollution. Vessels registered under FOC jurisdictions often circumvent this requirement by illegally discharging waste at sea, capitalising on weak enforcement mechanisms outside the EU. Moreover, when inspected, these ships may falsify waste logs and documentation to demonstrate compliance with Directive 2019/883. This practice undermines environmental regulations and contributes to increased maritime pollution by allowing untreated or hazardous waste to be directly released into the ocean, exacerbating a major ecological issue.

MT18 – Directive 2009/18/EC (Maritime Accident Investigation): FOC often fail to adhere to the IMO requirements that the directive implements, resulting in significant underreporting of maritime incidents. This deliberate neglect disrupts reliable data collection, which is crucial for analysing trends and improving safety protocols. This permits noncompliance with pollution controls, resulting in environmental degradation.

MT19 – Directive 2009/20/EC (Insurance for maritime claims): FOC States may not meet adequate safety protocols or carry sufficient insurance, undermining the financial guarantees for addressing accidents and pollution. By avoiding adequate insurance coverage, shipowners reduce operational costs but expose victims to the risk of undercompensation in environmental or maritime accidents. Additionally, weak oversight allows outdated or poorly maintained ships to remain

in operation, thereby increasing the likelihood of environmental incidents without the proper insurance to cover potential costs. Moreover, FOC can lead to discrepancies in how safety regulations and insurance obligations are enforced, as some nations may not strictly enforce the requirements, making it challenging to hold shipowners financially accountable. This loophole undermines the directive's goal of ensuring that shipowners take responsibility for damages, leading to significant legal and financial complications, particularly in cases of transboundary maritime incidents that cause environmental harm. As these vessels may not be subject to stringent inspections when entering EU waters, they circumvent the directive's intent, shifting the burden of cleanup and damage compensation to other parties, including governments and taxpayers, in the event of an incident.

MT20 – Directive 2014/90/EU (Marine Equipment Directive): Ships operating under FOC registers in jurisdictions that do not enforce Marine Equipment Directive standards or equivalent safety protocols. These flags often do not require certification for equipment, allowing the use of lower-quality, non-compliant, outdated, or poorly maintained equipment or gear that fails to effectively control emissions or ensure environmental safety. This lack of oversight can lead to the installation of substandard or counterfeit equipment, which may fail to perform under emergency conditions, thus endangering crew safety and marine environments.

The lenient oversight registers of many FOC States enable such vessels to bypass routine inspections, certifications, and maintenance protocols, which would otherwise identify and rectify equipment failures. This loophole allows shipowners to reduce operational costs at the expense of environmental and safety standards, resulting in increased pollution risks, including oil spills, illegal waste discharge, and higher greenhouse gas emissions.

MT21 – European Maritime Safety Agency (EMSA) Regulation (EC) No 1406/2002: FOC ships often fail to comply with EU directives such as the Sulphur Directive, which limits sulphur emissions from ship fuel, and the Monitoring, Reporting, and Verification Regulation, which targets CO_2 emissions. These vessels may avoid adopting necessary pollution control technologies, resulting in higher emissions and contributing to environmental degradation. Furthermore, FOC registrations facilitate the avoidance of stringent requirements for waste management and the legal disposal of hazardous materials, which are essential aspects of the European Maritime Safety Agency's safety protocols.

MT22 – EU Green Deal (COM/2019/640 final): FOC practices undermine the Green Deal's decarbonisation objectives by allowing vessels to avoid EU climate regulations such as the extension of the Emissions Trading System (ETS) to shipping and the FuelEU Maritime initiative. Ships registered under FOC often continue to use high-sulphur fuel and outdated technologies without adopting energy efficiency measures or alternative fuels, as their flag states lack robust enforcement of emissions standards. This enables shipowners to evade costly

compliance while engaging in “carbon leakage,” shifting operations to jurisdictions with lenient regulations and undercutting operators who invest in sustainable practices. As a result, FOC weaken the EU’s efforts to reduce maritime emissions by at least 55% by 2030 and achieve climate neutrality by 2050, while exacerbating environmental and competitive distortions in the sector.

MT23 – FuelEU Maritime Initiative Regulation (EU) 2023/1805: FOC vessels are less likely to install emission reduction technologies or adopt alternative fuels as required to address air emission challenges, as the value and age of ships do not justify the investment. Therefore, older tonnage under these registers is more likely to attempt to circumvent the rules or call ports close to, but off, the enforcement limits.

MT24 – Sulphur Directive (Directive 2012/33/EU): The Sulphur Directive mandates the adoption or maintenance of necessary infrastructure, such as scrubbers or low-sulphur fuel tanks, which are essential for reducing sulphur emissions. FOC ships may operate without such technologies, avoiding the financial burden associated with compliance. Another method employed by FOC is the falsification of fuel documentation. By registering under FOC, shipowners can present fraudulent bunker delivery notes or use falsified logbooks to claim compliance with the sulphur content regulations.

MT25 – EU Maritime Security Strategy (2014) (EUMSS): FOC practices undermine the objectives of the EUMSS, which seeks to strengthen maritime governance, safeguard sea lines of communication, and protect against security threats such as piracy, trafficking, and illegal fishing. Ships registered under FOC often operate with opaque ownership structures and inadequate oversight, creating loopholes that facilitate illicit activities, from smuggling and human trafficking to sanctions evasion. Weak enforcement by many FOC States also results in poor vessel monitoring, incomplete crew vetting, and lax security protocols, which heighten risks to maritime safety and EU security interests. By enabling anonymity and avoiding accountability, FOC compromise the EU’s ability to implement coordinated maritime surveillance and law enforcement, eroding the credibility and effectiveness of the EUMSS framework.

ii) Fisheries

Key Instruments	Policy Objectives			
	Safety and Environ-mental Protection	Social and Labour Conditions	Tax Good Governance	Sanctions Evasion
Directive 2008/56/EC (Marine Strategy Framework Directive MSFD)	F1			
Directive 2017/159 (Implementation of the Agreement concerning the implementation of the Work in Fishing Convention 188, 2007 of the ILO)		F2		
Regulation 2008/1005 (Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing)	F3		F4	

Table 23: EU International Policy Objectives - Fisheries

F1 – Directive 2008/56/EC (Marine Strategy Framework Directive MSFD): FOC-registered ships frequently engage in practices like illegally dumping waste and pollutants, including oil and hazardous substances, into marine environments, thus directly violating the directive's objectives to protect marine biodiversity and prevent pollution. Additionally, many FOC vessels operate with poorly trained seafarers, which worsens noncompliance with safety and environmental measures. Inadequate training leads to the mishandling of waste, poor execution of pollution prevention protocols, and improper equipment maintenance, which can prevent spills or leaks. FOC vessels transiting EU waters or entering EU ports—whether through accidents or the deliberate discharge of polluting substances—undermines the Union's efforts to achieve good environmental status in its marine areas. Such incidents are also difficult to sanction, given the frequent concealment of ultimate beneficial ownership and the inadequacy of insurance coverage.

F2 – Directive 2017/159 (Implementation of the Agreement concerning the implementation of the Work in Fishing Convention, Convention 188, 2007 of the ILO): FOC States have generally not ratified the ILO Convention, which enables vessels to evade safety regulations, operating with inadequate safety equipment and poorly maintained machinery, violating the Convention's mandate for ensuring proper safety gear and vessel maintenance. By choosing registers that are less stringent in enforcing these provisions, shipowners minimise costs but expose workers to heightened risks of injury and fatalities at sea. Furthermore, they often bypass rest period regulations, forcing crew members to work excessively long hours under extreme conditions. This results in chronic fatigue

and higher accident rates, contravening the directive’s emphasis on sufficient rest and fair working conditions.

In addition, many FOC vessels fail to provide minimum living standards for fishermen, with unsanitary and cramped living quarters, inadequate food supplies, and a lack of proper bedding, violating the directive's standards for adequate living conditions onboard. Crew members on these vessels are often subject to exploitative contracts, which result in delayed or reduced wages, limited legal recourse, and insecure employment terms, thereby contravening the directive’s provisions on fair remuneration and employment protections. This exploitation is compounded by the fact that many FOC vessels lack sufficient medical care or insurance coverage, leaving crew members vulnerable to illness or injury without access to essential health services.

F3 – Regulation 2008/1005 (EU system to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing): IUU fishing is one of the leading causes of fish stock depletion worldwide, and the EU has developed a zero-tolerance policy against IUU fishing, internally and externally. While the EU is the second-largest import market for seafood in the world, and the IUU Regulation is a strong instrument to prevent seafood imports originating from IUU fishing, widespread IUU fishing and the overwhelming role played by FOC-registered vessels challenge the EU's efforts to combat IUU fishing.

As a general concern, IUU fishing undermines fisheries management through the absence of, or under-recording of catches, and positioning and practices that often negatively impact the ecosystems. As a result, the sound scientific assessment of the stocks is weakened. In addition, the international fisheries governance system itself is weakened, through the undermining of the efficiency of RFMO, which are the primary bodies for fisheries management. The EU plays a significant role in RFMO, promoting science-based and ecosystem-based fisheries management, as well as the effective implementation and enforcement of jointly agreed rules and flag States' responsibilities through robust monitoring and control systems. Where the EU has in place an SFPA with third countries, IUU fishing not only impacts the EU’s efforts to agree on fishing access agreements based on science and the evaluation of surpluses, but also undermines access to the resources by the local population. Overall, IUU fishing cumulatively affects all sustainability objectives of the CFP as well as of the EU’s relations with less developed countries.

F4 – Regulation 2008/1005 (EU system to prevent, deter and eliminate illegal, unreported and unregulated fishing): FOC vessels undermine Regulation (EC) No 2008/1005/ by carrying out IUU fishing through opaque ownership structures and lax oversight. These vessels often conceal their true ownership, making it difficult to hold responsible parties accountable and weakening the regulation’s requirements for traceability and effective sanctions. FOC states frequently fail to properly check the veracity of the information contained in the catch certificates

they validate, allowing illegally caught fish to enter EU markets and enabling vessels to operate without valid licenses or with falsified documentation.

Such practices directly facilitate IUU activities prohibited by the Regulation, including unlicensed fishing, document falsification, and evidence tampering. The persistent lack of enforcement and oversight by some FOC States undermines the EU's efforts to deter IUU fishing. It also justifies their classification as non-cooperating countries under the Regulation, potentially leading to trade restrictions. This systemic non-compliance by FOC registers undermines the effectiveness of the EU's comprehensive framework for preventing and eliminating IUU fishing.

iii) Safety and Environmental Protection

The EU prioritises high safety standards and environmental protection internally, as evident in regulations such as the EU Marine Strategy Framework Directive[310] and the EU Sulphur Directive[311]. FOC practices allow vessels to evade compliance with these stringent EU regulations by exercising weaker or non-existent enforcement. Internationally, the EU's objectives include promoting the global adoption of higher environmental standards than those of the IMO, aligning EU rules with international conventions, and promoting stricter and proactive environmental protection standards through instruments such as FuelEU.[312]

Overall, the FOC practices in the maritime and fisheries sectors presented above result in weakening the EU's ability to meet its marine environmental protection targets, including reducing maritime pollution, protecting biodiversity, sustainably managing fisheries and ensuring safer maritime operations. The operations of FOC ships compromise the effectiveness of the EU's environmental and safety frameworks. Therefore, the overall impact is severe due to the cumulative effects of these practices across multiple sectors.

iv) Social and Labour Conditions

The EU's internal social objectives related to maritime transport seek to protect seafarers' rights, ensure fair wages, and improve working conditions. Internationally, the EU works to strengthen ILO partnerships to improve global seafaring protections and to push for fair competition by reducing labour cost disparities with non-EU operators.

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[310] The EU Marine Strategy Framework Directive (2008/56/EC) establishes a framework for achieving "Good Environmental Status" of European marine waters by 2020 through ecosystem-based management: https://eur-lex.europa.eu/eli/dir/2008/56/oj/eng?.

[311] The EU Sulphur Directive (2012/33/EU) limits the sulphur content of marine fuels used in European waters to reduce air pollution, acidification, and protect human health: https://eur-lex.europa.eu/eli/dir/2012/33/oj/eng?

[312] FuelEU Maritime is a new European Union law that came into force in 2025. It aims to make shipping cleaner by gradually cutting the climate impact of the fuels ships use, requiring vessels to connect to onshore power while docked, and imposing fines if companies do not comply.

Operators of FOC vessels often disregard these standards, and seafarers face unacceptable labour conditions on board, including abandonment, non-payment of wages, and continuous violation of their human, social, and labour rights.

Overall, the FOC practices in the maritime and fisheries sectors presented above result in weakening the EU's ability to promote social justice and fair working conditions at the international level. This practice increases the risk of exploitation, abuse, and unsafe working environments, which is contrary to the EU's broader objectives of labour protection and social equity. Considering also the EU's interest and commitment to wider policies related to human rights and equal opportunities, this impact is also assessed as high because of the combined impacts of these practices across various sectors.

v) Tax Good Governance [T]

Key Instruments	Policy Objectives			
	Safety and Environmental Protection	Social and Labour Conditions	Tax Good Governance	Sanctions Evasion
EU list of noncooperative jurisdictions for tax purposes			T1	
Directive (EU) 2015/849 (Prevention of the use of the financial system for the purposes of money laundering or terrorist financing)			T2	

Table 24: EU International Policy Objectives – Tax Good Governance

T1 – EU list of noncooperative jurisdictions for tax purposes: By registering vessels in countries with lax tax laws and weak transparency requirements, vessel owners take advantage of legal systems that obscure the actual ownership of assets. Complex corporate structures are often employed, involving shell companies or subsidiaries spread across multiple jurisdictions, which makes it difficult to trace the flow of profits. These jurisdictions are typically noncompliant with the EU's demands for automatic exchange of financial information, a key requirement in the fight against tax evasion and profit shifting. Moreover, these jurisdictions enable shipowners to artificially lower their tax liabilities by shifting profits to tax havens where minimal or no taxes are imposed on foreign earnings.

T2 – Directive (EU) 2015/849 (Prevention of the use of the financial system for money laundering or terrorist financing): FOC foster complex and opaque corporate structures, often incorporating offshore shell companies. This allows evading the stringent beneficial ownership disclosure requirements mandated by Directive 2015/849. Through these opaque networks, FOC facilitate money laundering by moving funds through offshore accounts without triggering alarms for EU authorities. This lack of transparency is one of the methods that enable owners to bypass due diligence measures central to the anti-money laundering

directives, making it difficult for authorities to trace financial transactions or identify suspicious activities. Consequently, regulatory leniency in both environmental and financial sectors allows FOC to sidestep scrutiny, undermining the EU's efforts to combat financial crimes, ecological damage and IUU fishing, and posing significant challenges to global ocean governance.

Overall, FOC registrations enable owners and operators to avoid taxes and registration fees in the State where they are domiciled. This practice shifts revenue collection to registers that are largely irrelevant to the owners' nationality and corporate structure, increasing opacity and facilitating potential tax evasion and money laundering activities.

The widespread use of FOC for tax avoidance and potential financial crime significantly weakens the EU's efforts to uphold fair taxation, transparency, and global leadership in registered shipping tonnage. It also undermines broader policies, such as maritime labour protections and more rigorous enforcement through PSC frameworks.

The large number of ships opting for FOC highlights systemic challenges to regulatory oversight. This not only hampers the effective implementation of EU anti-money laundering directives (AMLD) but also facilitates money laundering schemes tied to maritime operations. The mechanisms are provided below:

- Opaque Ownership Structures: Ships registered under FOC often benefit from secrecy provisions that obscure true ownership. This creates opportunities for criminal entities to launder illicit gains by masking financial flows and shielding assets from scrutiny.
- Jurisdictional Arbitrage: Many FOC states have lax regulatory frameworks that do not align with the EU's rigorous AMLD requirements. This encourages shipowners to exploit legal loopholes to avoid detection and compliance obligations.
- Evasion of Reporting Standards: By operating under FOC, entities circumvent the stringent reporting duties imposed by national registers. This impedes the EU's efforts to combat money laundering and other financial crimes by limiting access to accurate ownership and financial records.
- Tax Justice and Fair Competition: Beyond revenue loss, FOC practices erode the principle of tax justice. EU-based shipowners adhering to legal obligations face unfair competition from those exploiting FOC, undermining market integrity and legal order.

vi) Legal Liability and Accountability

The EU Directive on Shipowner Liability[313] ensures that shipowners are held accountable for environmental damage, safety violations, and labour exploitation. The applied limits are stricter than those of the international conventions. Registering ships in FOC States makes it difficult to hold the shipowners accountable under EU law.

In practice, this is an issue of the legal structure that hides the ultimate beneficial owner. While the EU legislation requires the exact identification of the UBO and all related interests, structures under FOC might hide vital information to evade their liability and accountability obligations.

Internationally, the EU advocates for international liability frameworks for environmental damage (i.e. oil spills) and supports the IMO efforts in standardising accident investigations. Overall, this lack of clarity and legal accountability undermines the fair competition among the FOC fleets compared to those of national closed registers, as well as the rule of law, as shipowners operating under FOC can avoid prosecution for environmental damage, labour exploitation or safety violations, weakening the EU's efforts to enforce justice and maintain high standards.

vii) Sanctions Evasion [S]

Key Instruments	Policy Objectives			
	Safety and Environmental Protection	Social and Labour Conditions	Tax Good Governance	Sanctions Evasion
EU Sanctions	S1[314]			

Table 25: EU International Policy Objectives – Sanctions Evasion

S1 – EU sanctions**:**

Restrictive measures ('sanctions') are a core instrument of the Union's external action, designed to promote international peace and security, uphold international law, and support multilateral governance in line with the UN Charter by imposing

[313] The EU Directive on Shipowners' Liability (Directive 2009/20/EC) establishes a uniform legal framework requiring shipowners operating vessels of 300 gross tonnage or more in EU waters to maintain insurance or other financial security to cover maritime claims, particularly those arising from death, personal injury, and damage to property. The directive ensures compliance with the 1996 Convention on Limitation of Liability for Maritime Claims (LLMC) and aims to harmonise liability rules across Member States, strengthen passenger and seafarer protection, and promote fair competition by obliging shipowners to demonstrate adequate coverage through insurance certificates subject to port state control inspections.: https://eur-lex.europa.eu/eli/dir/2009/20/oj/eng

[314] Sanctions also addess restriction of trade, investment, and financial transactions. They also impact tax good governance.

restrictions on travel, trade, investment, or financial transactions[315] — for instance, under *Council Decision (CFSP) 2014/512*[316] and *Council Regulation (EU) No 833/2014,*[317] as amended. Evasion of such measures undermines not only the objectives of peace and security but also the practice of tax good governance, as practices such as opaque ownership structures, money laundering, and illicit financial flows directly erode fiscal transparency and accountability.

At the international level, the EU collaborates with partners to strengthen enforcement of measures such as the oil price cap introduced in response to Russia's military aggression against Ukraine. It enhances cross-border maritime surveillance to detect and disrupt illicit ship-to-ship (STS) transfers. It imposes port access restrictions on third-country operators found to be facilitating the evasion of sanctions. However, the effectiveness of the EU Sanctions Framework, as with broader international sanctions regimes, depends not only on the legal precision of its measures but also on robust enforcement and international coordination. Circumvention tactics, such as the use of "dark fleet" operations, opaque ownership structures, money laundering, or arms trafficking, are facilitated by FOC, which allows non-compliant vessels to operate with relative impunity. This is also the case for non-EU coastal States, where cargo operations, including loading and unloading, frequently take place in ports with strategic or economic interests that are at odds with EU measures, including, at times, sanctioned jurisdictions themselves.

This is particularly the case for jurisdictions such as North Korea and Iran, where the use of FOC, opaque ownership structures, and STS transfers at sea is routinely employed to circumvent restrictions. As demonstrated in Table 26, both regimes exploit the weaknesses of fragmented global shipping oversight, registering vessels under lenient or low-transparency flags and masking ownership through shell companies in jurisdictions with limited regulatory scrutiny. These practices significantly erode the effectiveness of sanctions, not because enforcement measures such as port bans, AIS tracking, vessel blacklisting, or financial penalties are absent, but because the strategic use of FOC, opaque ownership, and STS transfers consistently outpace such measures. As shown in Table 26, both North Korea and Iran exploit gaps in global maritime governance, making coordinated responses by the EU, the United States, and the United Nations all the more essential.

Moreover, sanctions evasion is not limited to undermining security or environmental objectives; it also intersects directly with global efforts to combat illicit financial flows. The European Commission has emphasised that restrictive measures must be implemented consistently with the Union's broader frameworks on anti–money laundering, counter–terrorist financing, and tax

[315] See https://www.eeas.europa.eu/eeas/european-union-sanctions_en

[316] See https://eur-lex.europa.eu/eli/dec/2014/512/oj/eng

[317] See https://eur-lex.europa.eu/eli/reg/2014/833/oj/eng

transparency. International bodies such as FATF[318] highlight that opaque ownership structures, shell companies, and under-regulated financial channels, which are used to circumvent sanctions, are the very same mechanisms that erode tax good governance. Strengthening cooperation between sanctions enforcement, financial supervision, and tax governance initiatives is therefore essential to closing loopholes that allow sanctions evasion to persist.

Subject	Background	FOC exploitation of the situation	Impact of sanctions
North Korean Sanctions Evasion[319]	North Korea has faced multiple sanctions from the UN, the EU, and the U.S. for its nuclear weapons program. Despite these sanctions, the regime uses the maritime sector to circumvent restrictions and fund its activities	Ships registered under FOC, such as in Panama or the Marshall Islands, have been implicated in smuggling goods, including coal and oil, for North Korea. Companies based in jurisdictions with weak transparency requirements are used to obscure the ownership of these vessels	The UN and U.S. have implemented measures such as tracking AIS transponder signals and blacklisting specific vessels involved in ship-to-ship transfers of sanctioned goods. Enhanced scrutiny of FOC registers has led to the de-registration of North Korean-linked vessels.
Iranian Oil Smuggling[320]	Iran uses oil exports to fund various activities, including support for terrorist groups like Hezbollah. Sanctions by the U.S. and EU restrict Iran's oil trade.	Iranian tankers often operate under FOC to evade sanctions. These vessels may turn off their AIS to hide movements and transfer oil to other ships at sea. Shell companies based in countries like Malaysia or Panama are used to obscure ownership and facilitate the sale of sanctioned oil.	The U.S. has sanctioned multiple shipping entities and individuals involved in facilitating these transactions. Collaborative international efforts have tracked and interdicted oil shipments, seizing illicit funds and disrupting supply chains.
Terrorist Financing Through Illicit Goods[321]	Terrorist organizations like Al-Shabaab and ISIS have used the maritime sector to smuggle goods, including weapons, drugs, and human trafficking, to finance their activities.	Ships registered under FOC are used to smuggle weapons or contraband, taking advantage of lenient regulations and reduced inspections. The anonymity provided by shell companies linked to FOC vessels obscures the true beneficiaries of these operations.	The EU's Operation ATALANTA, targeting piracy and smuggling in the Indian Ocean has disrupted Al-Shabaab's funding routes. Sanctions on specific vessels and operators have led to asset freezings and disrupted the ability of terrorist groups to generate revenue through shipping.

Table 26: Examples of Sanctions Evasion

Overall, circumventing international and EU sanctions through FOC registration undermines the EU's ability to enforce its sanctions effectively, weakening its geopolitical influence and its efforts to maintain regional security. It also

[318] FATF (2025), Complex Proliferation Financing and Sanctions Evasion Schemes, FATF, Paris, https://www.fatf-gafi.or, see e.g., p.47 on Altering Vessel Identification

[319] See North Korea's Maritime Sanctions Evasion Tactics: https://www.globalriskintel.com/insights/north-koreas-maritime-sanctions-evasion-tactics

[320] See U.S. Report: Iran's Support for Terrorism: https://iranprimer.usip.org/blog/2023/mar/30/us-report-iran's-support-terrorism

[321] See wenty Years After 9/11: The Jihadi Threat in the Arabian Peninsula https://ctc.westpoint.edu/twenty-years-after-9-11-the-jihadi-threat-in-the-arabian-peninsula/

compromises international efforts to curb illicit activities, such as arms smuggling or unauthorised trade with sanctioned nations. The impact is assessed as high.

1.4. Cross-sectoral Impacts on EU International Policy Objectives and Linkages across policy fields

1.4.1. Overview of cross-sectoral impacts

The cross-sectoral impacts of FOC operations challenge key EU policy objectives across several domains, including environmental protection, social justice, economic governance, international rule of law, and security. These practices undermine global governance frameworks, create inefficiencies in the global shipping market, and contribute to the erosion of human rights and environmental standards.

Table 27 below outlines the sectoral and cross-sectoral impacts of FOC operations. While each impact area is presented in relation to its primary domain (environmental, social, economic, legal, and security), the associated implications often extend beyond their immediate sphere, influencing other policy areas relevant to the EU's international objectives..

FOC Impact Area	Cross-Sectoral Implication	Relevance to EU International Policy Objectives
Environmental Protection & Ocean Governance	FOC facilitate environmental degradation (pollution, IUU fishing, illegal dumping) that disrupts marine ecosystems, fisheries, and biodiversity, while also undermining food security and distorting global seafood markets..	Undermines EU's environmental sustainability goals, such as the EU Green Deal, SDG 14, and marine biodiversity preservation.
Human Rights & Labour Standards	Exploitation of seafarers and shipbreaking workers under FOC undermines global labour rights and decent work, with knock-on effects on trade competitiveness and social stability	Conflicts with the EU's commitment to fair labour standards, decent work, and social justice through ILO conventions and trade agreements.
Tax Evasion & Fiscal Integrity	FOC enable tax evasion by allowing shipowners to register vessels in low- or no-tax jurisdictions, reducing public revenue and indirectly weakening the financing of social and environmental protection policies.	Erodes EU's objectives for tax good governance, transparency, and fair competition, and contributes to global wealth inequality.
Legal Accountability & International Law	FOC weaken enforcement of international maritime conventions (IMO, ILO), resulting in regulatory gaps that not only undermine trust in global legal systems but also hinder progress on labour rights, environmental protection, and fair competition.	Undermines the EU's role as a global advocate for the rule of law, international cooperation, and the enforcement of multilateral agreements.
Security & Stability	FOC facilitate criminal activities (smuggling, human trafficking, piracy), contributing to instability in key maritime trade routes and undermining both economic development and human security.	Threatens EU security interests, undermining global maritime security and the protection of trade routes critical to EU economic interests.

Table 27: Summary of Cross-sectoral Implications

The operation of FOC-registered vessels has a profoundly disruptive cumulative effect on the EU's international objectives regarding good governance and fair competition across multiple maritime and associated sectors.

FOC practices enable shipowners to bypass EU regulatory frameworks covering multiple policy fields, creating severe market distortions that ripple across all sectors (maritime transport, cruise, fisheries, and ship recycling). FOC vessels often operate at significantly lower costs by evading compliance with many critical EU regulatory frameworks (environmental, labour, safety, taxation). This regulatory evasion gives FOC operators an unfair economic advantage over EU-based businesses, which are bound by stringent compliance requirements.

In the transport and cruise sectors, the undercutting of operational and recycling costs through non-compliance enables FOC vessels to offer lower freight rates and service prices. This disadvantages EU-compliant operators and undermines the EU's capacity to promote high standards in maritime governance internationally. The resulting market imbalance threatens to drive a race to the bottom, where EU companies face increasing external pressure to lower standards in order to remain competitive, contradicting the EU's Green Deal objectives, its commitment to decent work conditions, its leadership in promoting environmentally responsible ship recycling practices globally, and its support for international sustainable development goals.

In the fisheries sector, the concealment of UBO prevents applying effective and dissuasive sanctions to the true owners of the convicted vessels, while the widespread deceptive practices disable effective monitoring and control of fishing activities on the high seas. This is further compounded by the often limited capacities and/or political will of flag and port States to do so. Likewise, the hiring of non-nationals allowed by FOC has resulted, especially in long-distance fishing, in a widespread phenomenon of low wages, poor or unsafe working conditions and insufficient safety training. This exposes crew members to the highest risk of accidents at sea and the lowest degree of legal recourse.

The cumulative outcome is a reinforcement of non-compliant, high-risk practices across the maritime value chain, directly conflicting with EU goals in several key areas:

- Environmental Sustainability: Lower compliance reduces incentives for cleaner and safer operations, and allows environmentally destructive practices, undermining EU climate and marine biodiversity objectives.
- Labour Rights Protection: Exploitation of seafarers and shipbreaking workers contravenes EU efforts to uphold decent work standards globally.

- Rule of Law and International Regulation: Persistent regulatory avoidance erodes trust in the effectiveness of international agreements that the EU champions.
- Economic Governance and Tax Fairness: Tax evasion practices by FOC-registered vessels dilute the EU's external actions on fiscal transparency and fair competition.

Thus, the failure to enforce effective competition policies in the maritime sector not only distorts global trade dynamics but also weakens the EU's broader agenda for promoting good governance, sustainable economic growth, and human rights protections worldwide.

Figure 35 visually represents the cross-sectoral linkages between FOC impacts and EU international policy objectives. Each node represents either an FOC impact area or an EU policy objective, and the directed edges indicate the relationships or influences between them.

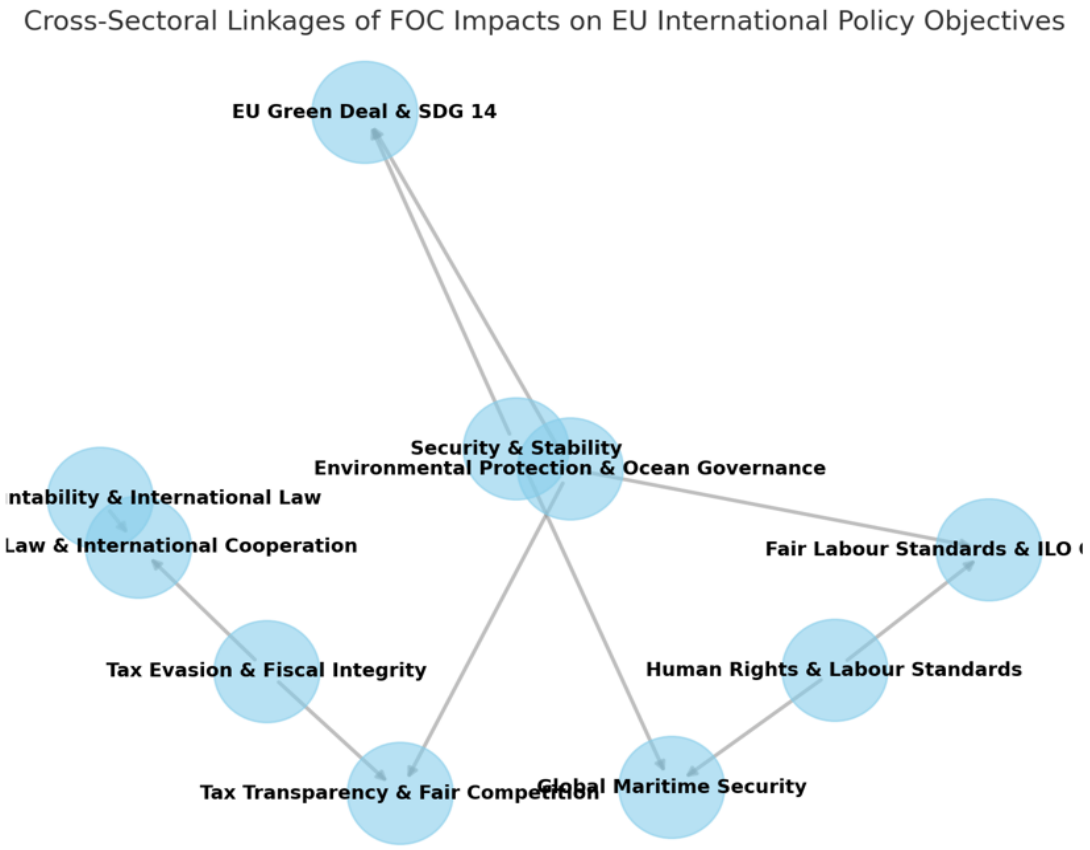

Figure 35: Visualisation of cross-sectoral impact

1.4.2. Linkages across policy fields

The operation of vessels under FOC entails significant cross-sectoral linkages and therefore generates systemic impacts across multiple policy domains. FOC practices exploit regulatory weaknesses in one sector, which in turn amplifies

vulnerabilities in others, leading to compounded challenges that affect maritime safety, labour rights, environmental sustainability, fiscal governance, fisheries management, supply chain security, and global stability. In sum, rather than representing isolated sectoral deficiencies, FOC operations constitute a deeply interconnected network/system wherein regulatory avoidance in one area creates ripple effects across a wide array of fields. This section provides a detailed analysis of selected linkages (Figure 36), demonstrating how systemic vulnerabilities propagate across domains.

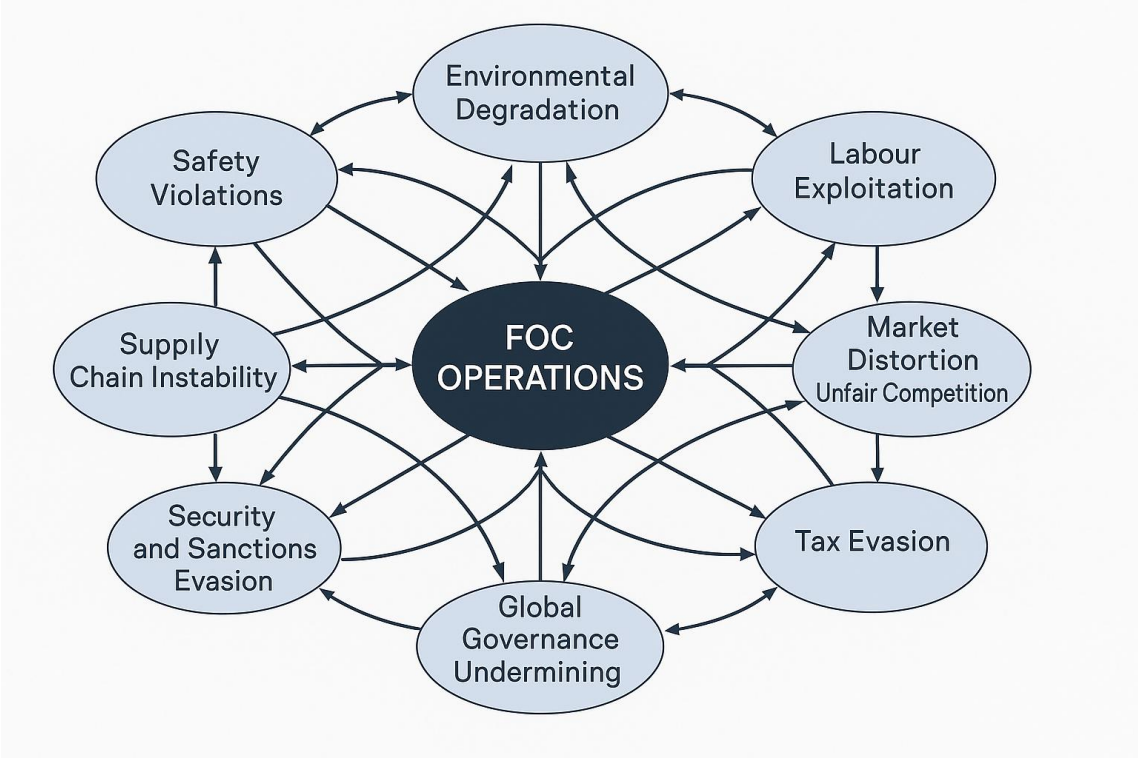

Figure 36: Interrelation of Implications of FOC operations

i) Safety, Environmental Deterioration and Economic Exploitation

The circumvention of safety and environmental standards under FOC regimes directly supports economic returns by enabling cost reductions through non-compliance. These practices simultaneously move risks onto workers, marine ecosystems, and the broader society.

Contributing factors:

- Lower safety standards lead to accidents, loss of life and higher transport costs to global trade resulting from less reliable shipping services.
- Environmental non-compliance results in marine pollution, affecting ecosystems and coastal economies.
- Cost-saving through unsustainable practices exacerbates global governance challenges in ocean management.

Linkages**:**

While FOC registration enables various forms of regulatory avoidance, it is important to distinguish between different types of non-compliance. As an example, IUU fishing specifically relates to violations of fisheries management regulations, depleting fish stocks, and negatively impacting marine ecosystems. The evasion of safety protocols, environmental standards and labour protections are separate issues but connected. FOC-registered IUU vessels often engage in multiple forms of non-compliance, including illegal waste disposal, excessive emissions, and labour exploitation through the use of underage and unprotected workers. These violations are frequently interconnected through cost-cutting strategies and tax avoidance schemes. By registering under FOC, shipowners can reduce operational costs, which may lead them to neglect safety protocols and environmental protections while also employing cheap, underregulated labour. This creates a compound effect where inadequate oversight in areas such as labour conditions enables broader violations across safety and environmental domains. Indeed, when vessels cut costs through labour exploitation, they gain the financial flexibility to engage in other harmful practices like IUU fishing operations. These interconnected violations undermine specific regulatory frameworks and the EU's broader efforts to establish fair and sustainable maritime practices.

More specifically:

- Low safety standards result in loss of life, accidents, incidents and injuries, poor working and living conditions and abandonment, and therefore, less reliable shipping. This directly impacts the overall reliability of transport and the public image of the shipping mode, as well as labour and social rights and attractiveness of the seafaring profession. Consequently, the transportation cost, in the long run, is increased due to scarcity of crew, high off-hire time of vessels, increased insurance premiums and cost of cleaning, rehabilitation, and repatriation.

- Poorly maintained FOC vessels and lack of compliance with environmental protection regulations onboard increase both routine and accidental marine pollution. Therefore, the operation of FOC vessels contributes to ocean pollution, affecting marine ecosystems and coastal communities that depend on fisheries and tourism. Routine and accidental marine pollution degrades water quality and disrupts marine biodiversity, directly impacting fisheries by depleting further fish stocks and undermining sustainable fishing practices. In turn, this affects the livelihoods of coastal communities reliant on fishing as a primary economic activity and food source. Additionally, polluted waters harm tourism by reducing the appeal of coastal destinations, further compounding economic losses for these regions.

ii) Labour Exploitation and Maritime Safety and Supply Chain Disruptions

Labour exploitation aboard FOC vessels is intrinsically connected to maritime safety deficiencies. Poor working conditions and weak labour protections contribute directly to safety risks at sea.

Contributing factors**:**

- Exploited, fatigued and undertrained crews increase accident risks.
- Weak labour protections correlate with insufficient safety oversight.
- Degradation of the seafaring profession undermines the future availability of skilled maritime labour, raising operational costs.

Linkages**:**

Labour exploitation on FOC-registered ships is directly connected to the undermining of maritime safety standards and unsustainable fishing practices (e.g., IUU fishing), as FOC countries have weak oversight of both labour and safety regulations.

The lack of oversight on FOC vessels, particularly with regard to maintenance and safety standards, creates a direct linkage with the disruption of global supply chains. The exploitation of labour on FOC-registered vessels allows for minimal oversight of both labour and safety practices, undermining international labour standards, including those addressing fair wages, working hours and safe working conditions, which often overlap with violations of safety protocols onboard. This lax regulatory framework facilitates the sustenance of IUU fishing, where forced labour and human trafficking are prevalent on FOCfishing vessels operating in remote waters.

More specifically:

- Poor labour conditions on FOC ships, particularly in industries such as cruise, fisheries and shipbreaking, lead to increased accidents and fatalities. In the shipbreaking industries, this is manifest through inadequate safety protocols, insufficient training and substandard equipment maintenance. These deficiencies lead to higher rates of workplace accidents, severe injuries, and fatalities, including the last trading voyages when the value of the asset is substantially decreased. Weak enforcement of safety regulations compounds these issues, resulting in increased pollution incidents, maritime accidents and shipwrecks. These safety failures not only endanger workers' lives through maritime accidents but also disrupt global trade routes and supply chains, causing delays and financial losses across interconnected industries.
- The lack of labour protection correlates with inadequate safety regulations, resulting in a higher incidence of pollution incidents, accidents, and shipwrecks that harm the environment and disrupt the stability of global supply chains. Additionally, it damages the image of the seafaring

profession, with long-term effects on the availability of seagoing personnel and their competencies, thereby increasing competition among shipowners for the same labour. This results in higher manning expenses, operational costs, and overall transportation costs.

- The lack or limited protection of labour rights results in unfair competition among seafarers, as some are perceived as ‘cheap’ and convenient labour and others as ‘expensive’ labour. Both affect the social contributions and revenues in their countries of origin, which reduce the national health and social security protection in the labour-supplying states. The deteriorating working conditions and safety standards damage the reputation of the maritime profession, deterring new talent from entering the industry. This creates a vicious cycle where declining workforce numbers increase competition among shipowners for qualified personnel, ultimately driving up manning expenses and operational costs. The resulting higher transportation costs impact the competitiveness and sustainability of the entire maritime sector.

iii) Tax Evasion and Unfair Competition

Tax evasion facilitated by FOC registration undercuts fair competition and erodes public sector revenues necessary for regulatory enforcement and social investment.

Contributing factors:

- Artificially low operational costs distort market dynamics.
- Reduced tax revenues weaken states' capacities to fund critical maritime, environmental, and social oversight mechanisms.

Linkages:

Tax evasion enabled by FOC is intertwined with distorted global competition, as FOC vessels undercut those operating under stricter tax and regulatory regimes, creating significant economic disparities within the maritime industry. FOC vessels exploit the lenient tax and financial disclosure requirements of register countries by enabling shipowners to reduce or entirely evade tax obligations that would otherwise apply under stricter regulatory frameworks, such as those enforced in the EU. In the fishing sector, the lack of transparency on UBO additionally prevents public authorities from applying effective and dissuasive sanctions to vessel owners that have engaged in or supported IUU fishing. This evasion not only deprives governments of critical revenue but also provides FOC-registered vessels with an unfair competitive advantage, allowing them to undercut operators that adhere to stricter taxation and compliance standards.

In the shipping and cruise industries, these practices extend beyond tax evasion to broader financial manipulations, including the use of shell companies to obscure ownership and facilitate money laundering. Exploiting the opaque

corporate structures enabled by FOC, some shipowners conceal profits, launder proceeds from illegal activities or finance criminal networks, undermining international efforts to promote transparency and accountability in the global maritime sector.

The ship recycling industry is not immune to these issues. FOC vessels nearing the end of their operational life are often sold for scrapping in countries with weak environmental and labour regulations. This practice allows ship owners to avoid costly compliance measures mandated in regions like the EU, which include stricter environmental standards and higher labour protections. In bypassing these regulations, owners can also circumvent expenses that would otherwise apply in EU jurisdictions, such as higher registration fees for the last voyages and taxes on dividends from extraordinary profits from ships under these flags. This not only distorts competition but also contributes to exploitative working conditions and environmental degradation in shipbreaking yards.

These interconnected dynamics highlight how FOC regimes enable both financial and regulatory circumvention, reinforcing inequities in global maritime industries and perpetuating systemic violations of labour, environmental, and financial standards.

More specifically:

- Unfair Competitive Advantage: FOC ships have a cost advantage due to lower labour costs and tax avoidance, allowing them to outcompete legitimate operators that comply with EU tax policies and international standards.
- Depletion of Government Revenues: Tax evasion through FOC ships depletes public resources, limiting government capacity to invest in infrastructure, social services, and environmental protection, creating a vicious cycle of underfunded regulation and oversight, undermining global governance and the rule of law

iv) Undermining Global Governance and the Rule of Law

FOC operations systematically undermine international regulatory frameworks, weakening the application of international law and the law of the sea (i.e. UNCLOS), institutions such as the IMO, ILO and EU-led global governance initiatives.

Contributing factors:

- Non-compliance erodes trust and undermines the effectiveness of multilateral agreements.
- The proliferation of regulatory avoidance undermines the EU’s efforts to promote rule-based maritime governance.

Linkages:

The operation of FOC vessels disregards the key fundamental principles of the law of the sea and therefore undermines the international regulatory frameworks, which rest upon them. These include IMO, ILO and the EU's global governance initiatives in areas such as labour, safety, and the environment.

Allowing shipowners to register vessels in countries with minimal enforcement of labour, safety, and environmental standards directly contradicts the "genuine link" principle of UNCLOS, and the objectives of the IMO and ILO, which aim to promote safe, secure, and environmentally responsible shipping and protect seafarers' rights through conventions such as the MLC. The EU has championed initiatives to improve labour conditions, enforce safety standards and address environmental concerns such as pollution and climate change. However, the lack of accountability within FOC systems undercuts these efforts, allowing non-compliant actors to evade responsibilities that are critical to achieving these goals. This undermines not only the integrity of international regulatory frameworks but also the principles of good governance, which emphasise transparency, accountability and equity in the management of global commons like the ocean.

More specifically:

- Erosion of International Regulations: FOC practices undermine the IMO, ILO, and other multilateral agreements, weakening global efforts to enforce high safety standards, environmental protection, and labour rights. FOC practices do not simply avoid international regulations. They exploit gaps in enforcement and create disparities between jurisdictions with varying levels of regulatory rigor. This means that FOC practices undermine the collective effectiveness of international efforts because they take advantage of jurisdictions which leniently apply, or do not implement, international framework, which in turn dilutes the broader international compliance mechanism. By exploiting the opportunity of countries with weaker enforcement, FOC reduce the overall incentive for stricter regulatory bodies to effectively implement global standards. The result is a weakened system of international governance, where compliance is fragmented and less effective.

- Undermining the EU's efforts: FOC erode the EU's ability to promote international maritime governance, weakening its role in enforcing standards for environmental sustainability, fair trade, and human rights across maritime sectors. This is an interrelated effect rather than a direct impact. FOC do not immediately undermine the EU's efforts but instead indirectly weaken its influence by creating regulatory loopholes that allow non-compliance with international standards. Over time, this erodes the EU's ability to promote effective maritime governance, as it struggles to enforce environmental, trade and human rights standards and encourage

these in partner countries and in international fora. This is influenced by the competitive advantage of the limited number of FOC States, which enjoy a disproportionate influence in international fora. The cumulative impact of these practices diminishes the EU's global efforts in shaping sustainable and equitable maritime policies.

v) Fisheries and Marine Ecosystems

IUU fishing practices by FOC vessels contribute to environmental degradation and socio-economic instability in coastal communities. Thus, they undermine the EU's international policy objectives of promoting global fisheries governance, sustainable development, safeguarding biodiversity, ensuring fair labour practices, and enhancing global maritime governance.

Contributing factors**:**

- Overfishing and biodiversity loss weaken global fisheries and the EU's Common Fisheries Policy.
- Depletion of fish stocks exacerbates poverty and undermines sustainable development.

Linkages:

The depletion of fish stocks due to IUU fishing by FOC vessels is directly linked to broader environmental deterioration caused by overfishing and unsustainable maritime practices.

More specifically:

- Ecological Damage: Overfishing by FOC vessels damages marine ecosystems by not respecting the fisheries management rules in place at the national and multilateral levels, including regional organisations. Thus, they are affecting biodiversity and the viability of global fisheries. This undermines the EU CFP, which aims to ensure healthy fish stocks.
- Threat to Coastal Economies**:** IUU fishing contributes to the depletion of fish stocks, undermining the livelihoods of coastal communities that depend on sustainable fisheries. This not only increases poverty and food insecurity but also weakens the economic foundations of many developing States, undermining progress toward international development goals. Moreover, IUU fishing is often linked to broader illicit financial flows, including tax evasion and avoidance, through the use of shell companies, flag-hopping, and misreporting of catches and revenues. These practices erode the domestic tax base of coastal States and complicate enforcement of international tax and transparency regulations, such as those advanced by the OECD BEPS initiative and the EU list of non-cooperative jurisdictions for tax purposes**.**

- Labour standards**:** FOC vessels involved in IUU fishing often exploit seafarers through unsafe working conditions, low wages and a lack of legal protections.

- Port control measures**:** Weak enforcement of port state control measures enables these vessels to evade inspections, allowing them to continue unsustainable practices with impunity.

vi) Ship Demolition, Environmental Harm, and Labour Exploitation

Shipbreaking activities facilitated by FOC illustrate the convergence of environmental harm and labour exploitation in jurisdictions with weak regulatory oversight.

Contributing factors:

- The mismanagement of toxic waste harms ecosystems and communities.

- Dangerous working conditions contribute to widespread human rights abuses.

Linkages:

Shipbreaking practices facilitated by FOC are connected to both environmental harm (due to inadequate management of hazardous materials) and labour exploitation (due to unsafe working conditions and lack of labour protections).

More specifically:

- Environmental and Human Impact of Shipbreaking: The shipbreaking industry, particularly prevalent in countries with weak environmental and labour regulations, creates severe environmental and health hazards. Workers and local communities are exposed to toxic materials, including asbestos, heavy metals, and polychlorinated biphenyls (PCB)[322], while improper removal and disposal methods contribute to marine pollution. The industry's dangerous working conditions, frequently associated with FOC-flagged vessels, result in high rates of severe injuries and fatalities among workers who often lack basic protective equipment and safety training.

- Financial Crime, Environmental Harm, and the Illicit Vessel Lifecycle: The end-of-life phase of a vessel’s lifecycle exposes a convergence of financial crime and environmental violations, enabled by governance gaps across the maritime, recycling, and financial sectors. The use of FOC, layered ownership structures, and offshore intermediaries allows shipowners to engage in tax evasion, money laundering, and regulatory

[322] PCB are harmful substances found in the liquids of cooling systems, widely used onboard ships.

arbitrage. Profits from scrap vessel sales—often inflated by avoiding EU-compliant dismantling requirements—can be routed through shell companies in low-tax jurisdictions to obscure the origin of funds and evade home-state taxation. These same mechanisms also facilitate the laundering of proceeds from other illicit maritime activities, such as illegal fishing or sanctions evasion, effectively disguising the source and ownership of vessels and associated revenues.[323] [324]

At the downstream end,[325] vessels are often dismantled in non-compliant yards, particularly in South Asia, under hazardous labour conditions and with minimal environmental oversight. While shipowners may not directly orchestrate these practices, the deliberate avoidance of due diligence and reliance on opaque intermediaries enable and sustain this system. The lack of transparency in both the financial and operational aspects of end-of-life shipping creates a cycle whereby illicit gains are reinvested or concealed through the shipbreaking process, and the provenance of vessels involved in illegal fishing or maritime crimes is concealed.

This interlinked system of financial and environmental misconduct undermines both international regulatory efforts, such as those led by the FATF and the EU SRR, as well as broader goals of sustainable maritime governance, necessitating coordinated and cross-sectoral policy interventions.

vii) Supply Chain Disruptions and Safety Violations

Safety violations on FOC ships disrupt global trade and supply chains, impacting sectors beyond the maritime industry.

Contributing factors:

- Increased maritime accidents lead to shipping delays and higher global transport costs.
- Trade instability undermines industrial resilience and global economic stability.

Linkages**:**

Safety violations on FOC-registered ships are directly linked to disruptions in global supply chains by increasing the frequency of maritime accidents, leading

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[323] Leenhardt, P., et al., “Fishy business: regulatory and enforcement challenges of transnational organised IUU fishing crimes,” *Trends in Organized Crime* (2021), https://link.springer.com/article/10.1007/s12117-021-09425-y

[324] WWF, “TNRC Topic Brief: Beneficial Ownership in the Fishing Sector and Links to Corruption,” 2021, https://www.worldwildlife.org/pages/tnrc-topic-brief-beneficial-ownership-in-the-fishing-sector-and-links-to-corruption

[325] “Downstream end” in shipping and demolition refers to the final phase of a vessel’s life cycle, when it is decommissioned, dismantled, or recycled, typically at ship-breaking or demolition yards.

to delays in shipments. These delays, in turn, cause transport costs to rise and create instability within the flow of goods. This weakens the reliability of global trade, particularly affecting industries that rely on timely deliveries for production and distribution.

These disruptions extend beyond just transportation, causing significant instability in industrial operations. As shipping delays cascade through the supply chain, industries face uncertainty in raw material availability and finished goods delivery, which slows production cycles, and diminishes overall economic resilience. This impacts global economic stability as rising costs and uncertainty weaken business confidence, affecting everything from manufacturing to consumer prices.

viii) Sanctions Evasion and Global Security Risks

The opacity of FOC registers undermines the effective enforcement of EU sanctions regimes, particularly concerning actors under restrictive measures - including Russia, North Korea, and Iran. FOC opacity intersects with international security, law enforcement, and global maritime governance failures. Consequences include increased global security threats**,** enforcement asymmetries**,** and a heightened burden on compliant States, ultimately weakening the rule of law at sea and reducing the effectiveness of multilateral instruments.

Contributing factors:

- FOC facilitate a range of maritime activities that fall outside legal and regulatory oversight.
- This creates conditions under which sanctions evasion, illicit trade, and associated financial crimes can occur with limited accountability.

Linkages:

FOC actions lead to linkages between maritime opacity, sanctions evasion, illicit trade, organised crime, financial secrecy, and environmental harm, thereby undermining EU foreign policy, regulatory credibility, and security, while shifting enforcement and economic burdens onto EU authorities.

More specifically:

- Sanctions Evasion and Illicit Trade**:** FOC vessels have been documented in cases of unauthorised oil shipments to and from sanctioned jurisdictions**,** such as transfers to North Korea in defiance of UN and EU sanctions, or shadow fleet operations rerouting Russian oil exports in circumvention of the EU's oil price cap mechanism under Council Regulation (EU) 2022/879. These practices distort global oil markets, reduce the effectiveness of EU foreign policy instruments, and erode the credibility of multilateral sanctions regimes.

- Illicit Activities and Regulatory Gaps: Ships operating under FOC have also been implicated in smuggling, human trafficking, and unauthorised arms transfers**,** though the prevalence and scale of these activities vary. The lack of due diligence by some registers, especially where beneficial ownership transparency is weak, may contribute to these practices, though further empirical research is needed to quantify the extent. These activities link maritime opacity to broader transnational security risks, fuelling organised crime, undermining human rights, and destabilising conflict-prone regions.

- Increased Enforcement Costs**:** The burden of enforcing sanctions and monitoring vessel activity falls disproportionately on EU coastal and port authorities, which must invest in cross-border surveillance, satellite monitoring (e.g. AIS tracking), and port state controls to detect and interdict non-compliant vessels. This diverts resources from other public policy priorities and generates unequal enforcement burdens across jurisdictions, undermining cohesion in the EU's Common Security and Defence Policy.

- Financial Secrecy and Money Laundering: The financial architecture surrounding FOC operations, particularly in the context of end-of-life ship sales, has been linked to potential money laundering schemes, where proceeds from illegal activities(e.g. IUU fishing, arms smuggling) may be laundered through vessel recycling transactions involving shell companies and tax havens. However, the precise magnitude of this phenomenon remains under-documented in public sources and merits further investigation. This undermines the EU's objectives for tax transparency, fair competition, and the integrity of financial markets, creating vulnerabilities in the global financial system.

- Ship Recycling and Financial Concealment**:** FOC vessels are often dismantled in countries with weaker environmental and financial controls. These dismantling processes can serve as conduits for obscuring vessel provenance, redirecting profits from vessel disposal outside the EU fiscal framework, and circumventing the EU Ship Recycling Regulation (Regulation (EU) No 1257/2013)**.** This links sanctions evasion directly with environmental degradation, fiscal loss, and weakened regulatory credibility.

ix) Conclusion on linkages and across-policy fields

Table 28 outlines eight systemic linkages in the maritime domain, illustrating how failures or distortions in one area trigger cascading effects across safety, environmental protection, economic integrity, labour standards, and global governance. The findings reveal a tightly interwoven system where dysfunctions generate compounding risks and long-term consequences.

Safety non-compliance has both immediate and consequential impacts on the environment and the economy. Specifically, when safety standards are not met, it often results in environmental harm, such as oil spills or hazardous discharges, which in turn leads to economic distortions. These distortions include higher insurance premiums, cleanup costs, and loss of maritime resources. The cumulative consequences are increased accident rates, pollution incidents, and inflation of long-term operational costs across the sector.

Poor labour standards are directly linked to increased safety incidents. Inadequate working conditions, fatigue, and lack of training undermine vessel safety, contributing to higher operational risks and costs. This dynamic also feeds into broader social policy concerns, as it erodes the appeal and sustainability of the seafaring profession. The ultimate consequence is labour shortages, which exacerbate industry instability and reduce the availability of skilled maritime personnel.

Tax avoidance mechanisms and opaque ownership structures provide FOC ship operators with unfair competitive advantages. This distorts trade regulation and fiscal policy, undermining compliant actors and draining public revenues. The result is a weakened capacity of States to govern effectively, coupled with imbalanced market conditions that reward non-compliance.

Non-compliance with international maritime regulations weakens multilateral governance structures. As more actors disregard established norms, the overall effectiveness of global institutions diminishes. This trend undermines the rule of law at sea and erodes trust in international cooperation, making enforcement uneven and reducing compliance incentives for all participants in the maritime domain.

IUU fishing directly impacts environmental sustainability and coastal economies. IUU practices contribute to the collapse of marine ecosystems, which are vital to biodiversity and food security. The knock-on effects include reduced fish stocks, loss of livelihoods in coastal communities, and an increase in poverty, particularly in regions that depend on fisheries for both economic and nutritional needs.

The nexus of hazardous waste mismanagement and unsafe working conditions during ship demolition activities points to a dual failure in environmental and labour standards. The dumping of toxic materials and the lack of protective measures for workers result in public health crises and environmental degradation. These impacts are especially severe in jurisdictions with weak enforcement and oversight mechanisms.

Safety failures at sea—including accidents or substandard vessel operations—can create significant instability in global supply chains. These disruptions increase transportation costs and lead to delays in manufacturing and delivery, particularly in time-sensitive sectors. As global trade is tightly interconnected, localised failures can rapidly produce systemic shocks.

The opacity associated with FOC registers enables illicit maritime activities, such as sanctions evasion. The resulting dynamic involves heightened global security risks and uneven enforcement burdens. Compliant States bear disproportionate responsibility for monitoring and enforcement, leading to enforcement asymmetries and reducing the overall effectiveness of multilateral governance instruments. As noted, these trends weaken the rule of law at sea and contribute to the decline of institutional credibility in the maritime domain.

In sum, the table highlights the systemic and interdependent nature of maritime governance challenges. Each category demonstrates that failures in regulation or enforcement in one area often produce complex, multi-domain consequences that weaken safety, equity, sustainability, and legal order at sea.

Linkage	Primary Domains Affected	Key Interconnections	Consequences
Safety, Environment, Economic Exploitation	Safety, Environment, Labour, Economy	Safety non-compliance → environmental harm → economic distortions	Increased accidents, pollution, long-term cost inflation
Labour Exploitation and Maritime Safety	Labour Rights, Safety, Social Policy	Poor labour standards → increased accidents → higher operational costs	Erosion of seafaring profession, labour shortages
Tax Evasion and Unfair Competition	Fiscal Policy, Trade Regulation	Tax avoidance → unfair market advantage → depleted public revenues	Weakened governance capacity, distorted competition
Global Governance and Rule of Law	International Law, Maritime Governance	Regulatory non-compliance → weakened multilateralism	Reduced effectiveness of global maritime institutions
Fisheries and Marine Ecosystems	Environment, Fisheries Management	IUU fishing → ecosystem collapse → coastal economy impacts	Biodiversity loss, poverty increase
Ship Demolition and Labour Exploitation	Environment, Labour, Trade	Hazardous waste mismanagement + unsafe working conditions	Health crises, environmental degradation
Supply Chain Disruptions	Trade, Economy, Logistics	Safety failures → supply chain instability	Increased transport costs, manufacturing delays
Sanctions Evasion and Security Risks	Security, Law Enforcement	FOC opacity → illicit maritime activities	Global security threats, increased enforcement burden

Table 28: Linkages and interrelated effects

1.5. Assessment of the impacts of FOC on EU objectives

This section concludes the analysis of the effects of FOC on EU international objectives by evaluating the significance of the interconnected impacts of FOC practices across multiple maritime domains, as well as their linkages and cascading effects**.**

Based on the identification of key linkages across policy fields, this section assesses the severity of the impacts of FOC on EU international maritime policy.

Table 29 is structured across eight key domains, with the significance of each domain indicated by a complete circle (●) for high significance or a half circle (●◯) for moderate significance. The level of significance is described in terms of the following legend:

● : High significance/severe impact

●◯ : Moderate to high significance

◯ : Moderate significance

Involved Domains	Linkages	Interrelated Effects
Safety, Environmental Deterioration and Economic Exploitation ●	- FOC ships seem to have a high level of avoidance of safety and environmental regulations, contributing to accidents, injuries and loss of life as well as to pollution and ecosystem deterioration. - Reduction of operational cost due to lower environmental and safety standards, as well as lower registration fees (tax avoidance) result in unfair competition, risks to coastal States and the high seas, and economic exploitation of seafarers. - The interconnectedness of tax avoidance, labour exploitation, and environmental neglect under some FOC allows shipowners to cut costs by evading safety and environmental regulations, by using low-cost and underregulated labour.	- Environmental damage (pollution, illegal dumping, overfishing) undermines global sustainability efforts and affects marine ecosystems, coastal communities and local communities dependent on fisheries and tourism. - Economic exploitation (tax evasion, labour exploitation) reduces revenues, increases costs in the long-run, and distorts competition in global trade. - The environmental harm caused by poorly maintained FOC-flagged vessels triggers a chain reaction of socio-economic and ecological consequences, affecting biodiversity, fish stocks, tourism, and coastal community livelihoods.

Involved Domains	Linkages	Interrelated Effects
Labour Exploitation and Maritime Safety ●	- Lack of enforcement of labour rules on FOC ships is linked to weak safety standards, leading to unsafe working conditions and often to violation of labour, social and human rights. - The lack of oversight on FOC vessels links labour exploitation, maritime safety violations, and IUU fishing, enabling unsafe practices, forced labour, and human trafficking while disrupting global supply chains.	- Unsafe working conditions lead to accidents, injuries and deaths in all segments where substandard ships operate, stretching to the demolition yards that operators of substandard vessels select for unsafe and unsustainable dismantling conditions that lead to accidents, injuries, workers' death, as well as environmental pollution. Similarly, poor working conditions lead to unsustainable fishing practices which in turn lead to fish stocks depletion and pollution - Lack of enforcement of labour regulation results in unfair competition among seafarers and loss of social revenues. - Long-term damage to the attractiveness of the seafaring profession in various sectors, including commercial shipping, cruise, fishing as well as demolition sector.
Tax Evasion and Loss of Revenue ●○	- The loss of revenue of States where owners and operators domicile are linked with the lack of funding for national maritime interests. - The flow of revenues to FOC registers fuels negative operational outcomes. - FOC systems enable tax evasion, unfair competition, and financial manipulations, distorting the global maritime industry.	- States with maritime interests have reduced visibility in international fora. - FOC States with no global maritime interests enjoy higher significance due to registered tonnage. - States with interests in conflict of those of the EU enable and promote IUU actions.
Global Governance and International Law ●	- FOC undermine international regulatory frameworks (IMO, ILO) for safety, labour rights, and environmental protection - FOC undermine proper enforcement of diverse policies on fisheries, taxation and sanctions - FOC systems exploit regulatory loopholes, compromising global governance principles.	- Weak enforcement diminishes global safety, environmental protection, and labour standards. - FOC weaken EU's global leading role in maritime industries.

Involved Domains	Linkages	Interrelated Effects
Fisheries and Marine Ecosystems ●	- FOC registered vessels are often engaged in or support IUU fishing. - FOC registered vessels often violate safety, environmental and labour rules.	- Poor maintenance results in safety and environmental violations. - Substandard vessels violate security policies and wider EU interests. - Loss of revenues for States through tax and fees evasion contribute to this domain too.
Ship Demolition, Environmental Harm and Labour Exploitation ●	- FOC are associated with transactions engaging lower recycling standards, Lack of transparency regarding the intent to recycle and on last voyages lead to substandard ship recycling, sanctioned trade and Ghost ships.	- Poor standards and enforcement harm environment and workers' rights. - Sanctions Evasion and Shadow Trade: Sanctioned entities often secure access to compliant tonnage using informal networks, reflagging, or shell companies, enabling continued trade in violation of international measures. - Ghost Shipping and Regulatory Evasion: Separately, a growing number of vessels operate without valid registration, functioning as “ghost ships.” These vessels—sometimes overlapping with sanctioned fleets—pose acute risks to safety, environmental integrity, and financial compliance due to their complete lack of oversight.
Supply Chain Disruptions and Safety Violations ○	- Weak enforcement of safety and environmental standards heightens operational risks and undermines the reliability of maritime transport services. - FOC vessels trade in areas with reduced oversight and non-compliant ports.	- Accidents and disruptions increase costs and delay shipments. - Unsafe ships impact industries reliant on maritime transportation. - Violation of monitoring enables illegal trading. - FOC systems facilitate financial crimes and environmental harm.
Security and Sanctions Evasion ●	- FOC facilitate evasion of international sanctions. - FOC ships are linked to illegal activities (piracy, smuggling) - FOC enable and money laundering.	- Weakens global sanctions enforcement capacity. - Enables illegal trade and activities. - Compromises maritime security. - Facilitates transnational organised crime

Table 29: Policy impact and severity assessment

Furthermore, Figure 37 provides a comprehensive analysis of the multifaceted impacts of FOC on key EU policy domains, employing a multi-tier severity rating system (● indicating the highest severity). The figure encompasses eight critical areas, including maritime transport, labour, environmental protection, taxation,

global governance, fisheries, ship demolition, and security. It illustrates the complex interconnections and cascading effects of FOC operations across these sectors.

A crucial consideration often overlooked is the question of responsibility for addressing these challenges: inaction is frequently a multifaceted issue involving various actors, ranging from FOC registers themselves to EU institutions, third countries, and international organisations. The capacity and willingness to act differ depending on the policy domain and the jurisdiction involved. For example, the EU may implement robust regulatory measures domestically but face limitations in influencing third-country FOC registers or non-EU coastal states where enforcement gaps persist.

Given this complexity, it is essential to note that the assessments presented in Figure 37 primarily focus on the observable impacts within EU policy fields, without accusing specific actors or institutions. This methodological approach recognises the shared responsibility among multiple governance levels while highlighting areas where coordinated action is essential to close enforcement gaps and mitigate adverse outcomes. Therefore, references to “inaction” or “weak enforcement” should be interpreted as indicative of systemic challenges rather than a failure of any single actor.

The figure synthesises how the interplay between FOC and EU policy areas leads to a wide range of adverse consequences. It also highlights how FOC facilitate illicit and illegal practices, thereby amplifying security risks and complicating enforcement efforts. Mapping these linkages may serve as a foundation for developing targeted, multilevel policy responses that reflect the responsibilities of the EU, third countries, and international bodies.

Legend:

● High significance/severe impact

●◯ : Moderate to high significance

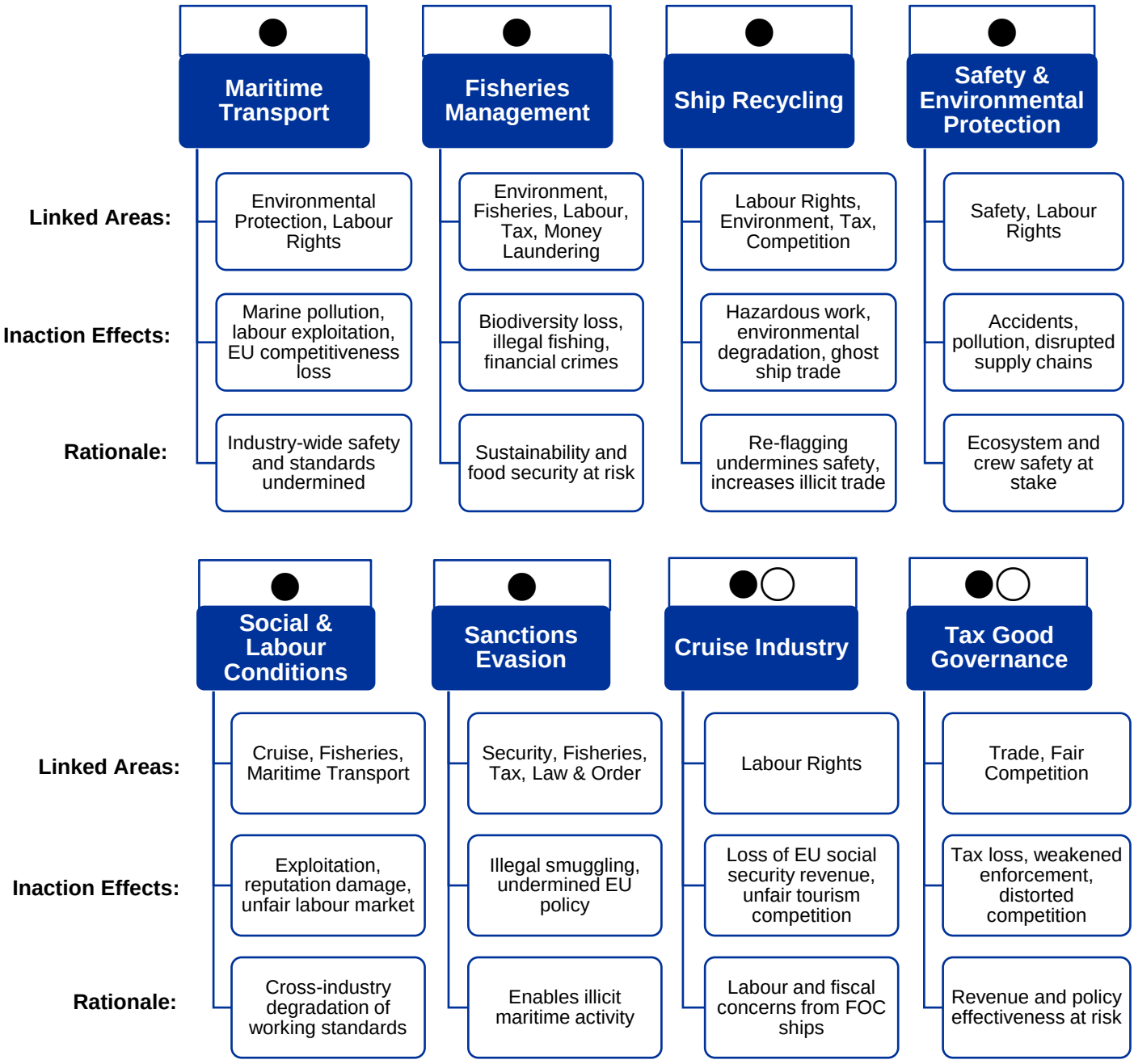

Figure 37: EU international maritime policy and severity assessment

Figure 38 describes the key patterns that emerge from the above assessment.

Key Patterns

1. Distribution & severity of linkages
   - Most domains show the highest significance rating (●), particularly in Maritime Transport, Fisheries Management, Ship Recycling and Safety and Environmental Protection, reflecting the serious implications of FOC practices for EU policy objectives.
   - Six out of eight policy fields are rated as critically severe
   - Critical areas include Maritime Transport, Fisheries Management, Ship Demolition, Safety/Environmental Protection, Social/Labour Conditions, and Sanctions Evasion
   - Only Cruise Industry and Tax Good Governance show moderate severity (●◯)
   - The prevalence of critical ratings suggests systemic failures in FOC regulation

2. Environmental and labour
   - Environmental protection appears as linked to 5 primary policy areas
   - Labour rights violations are present in 6 of the 8 policy domains
   - Both issues frequently co-occur, suggesting interlinked causation
   - Environmental and labour violations often stem from the same cost-cutting practices
   - These themes create compound effects across multiple sectors

3. Financial Crime
   - Money laundering appears as a linked concern in three major areas: Fisheries, Ship Demolition, and Sanctions Evasion
   - Tax evasion creates ripple effects across maritime transport, cruise industry, and ship recycling
   - Financial crimes often enable or incentivise other violations
   - The financial aspects often provide the motivation for regulatory avoidance
   - Complex ownership structures facilitate both financial crimes and regulatory evasion

4. Safety-Critical Policy Areas
   - Policy fields rated ● typically involve immediate risks to life or the environment
   - Direct safety threats appear in Maritime Transport, Ship Demolition and Safety/Environmental Protection
   - These areas show immediate and tangible negative impacts
   - Safety violations often create cascading effects across supply chains
   - Critical severity correlates strongly with potential for immediate harm

5. Policy Interconnections
   - Every primary policy field connects to at least three other EU policy areas
   - Fisheries Management shows the most extensive interconnections (5+ linked fields)
   - Sanctions Evasion demonstrates broad policy implications across security, environmental and financial domains
   - Complex interconnections make isolated policy solutions ineffective
   - Linked fields often create feedback loops that amplify negative impacts

6. Implementation and Enforcement
   - Enforcement gaps persist across critical areas, often linked to limitations in the regulatory capacity or willingness of certain FOC States.
   - Enforcement challenges commonly span multiple jurisdictions, requiring cross-border cooperation.
   - Several policy domains suffer from insufficiently coordinated international responses.
   - Weak enforcement or regulatory gaps in one area frequently undermine compliance efforts in related sectors.
   - A recurring pattern of systematic regulatory avoidance and exploitation of loopholes cuts across multiple domains.

Key Patterns	
7. Economic Impact o All policy fields show some form of economic distortion o Unfair competition appears as a recurring them o Revenue losses affect both EU and Member State levels o Economic impacts often create long-term structural problems	8. Supply Chain and Industry Sustainability o Multiple policy fields show impacts on industry sustainability o Long-term viability of maritime professions is threatened o Supply chain disruptions create broader economic impacts o Industry reputation suffers across multiple sectors o Sustainable practices are undermined by cost-cutting measures

Figure 38: Key patterns relating to severity assessment in Figure 37

Overall, the analysis reveals a complex web of interconnected challenges stemming from FOC practices, where critical severity ratings across most policy domains indicate deep-rooted systemic issues in maritime governance. The recurring intersection of environmental violations and labour exploitation, amplified by financial crimes and tax evasion, creates a self-reinforcing cycle of regulatory avoidance that undermines industry sustainability and effective governance. This multifaceted crisis is particularly evident in safety-critical areas, where immediate risks to human life and environmental integrity coincide with long-term threats to industrial viability.

2. International frameworks and the impacts of FOC

This section follows the same logic and approach in reviewing key international frameworks related to maritime governance, examining how their core objectives are impacted by FOC, both in terms of sectoral and cross-sectoral effects. It identifies the significant interlinkages that can explain the varying degrees of the significance of FOC impacts on international laws and regulations.

2.1. International frameworks

International maritime policy objectives are expressed in a complex framework of interconnected regulations and standards to ensure safe, sustainable, and efficient maritime operations across multiple sectors. These objectives are primarily established and overseen by specialised international organisations, notably the International Maritime Organization, with complementary frameworks from the United Nations, the International Labour Organization, and other global bodies.

A detailed analysis of the international regulatory framework supporting the policy objectives is included in section 15 of the Annex. The international policy framework can be categorised into the following key domains:

i) Maritime Transport Safety and Security:

The foundation of maritime policy rests on safety protocols, primarily through SOLAS, which establishes minimum safety standards for vessel design, construction, and operation. Maritime security is addressed through the ISPS Code, an integral part of SOLAS, focusing on threat prevention, including piracy, terrorism, and illicit activities. These frameworks are supplemented by regional initiatives such as the Djibouti Code of Conduct[326] and ReCAAP[327] for specific geographical challenges.

ii) Environmental Protection and Sustainability:

Environmental objectives are primarily governed by MARPOL, addressing marine and atmospheric pollution. The framework encompasses waste management, emissions control, and ecosystem protection. Recent initiatives focus heavily on decarbonisation through the IMO greenhouse gas (GHG)[328] reduction strategies, reflecting a growing emphasis on climate change mitigation in maritime operations.

iii) Labour Rights, Training and Social Protection:

The MLC provides comprehensive standards for seafarer rights, working conditions, and social protection. Key elements include fair wage requirements, working hour regulations, occupational safety standards, and provisions for migrant workers. The framework emphasises non-discrimination, collective bargaining rights, and access to healthcare and social security systems.

Complementing the MLC, STCW sets minimum qualification standards for seafarers' training, certification, and watchkeeping to ensure safety and competence aboard ships. STCW aims to maintain high standards of safety and environmental protection by establishing uniform training requirements internationally.

More recently, the STCW-F Convention extends these standards specifically to fishing vessel personnel, recognising the unique risks and operational conditions in the fishing sector. It establishes tailored training, certification, and

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[326] Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden, adopted 29 January 2009, IMO Doc. C 102/14:https://wwwcdn.imo.org/localresources/en/OurWork/Security/Documents/2009%20C-102-14-Sub-regional-meeting-to-conclude-agreements-on-maritime-security-piracy-and-armed-robber.-Secretary-General.pdf

[327] Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia:https://www.recaap.org/resources/ck/files/ReCAAP%20Agreement/ReCAAP%20Agreement.pdf

[328] 2023 IMO Strategy on Reduction of GHG Emissions from Ships. Resolution MEPC.377(80) and Initial IMO Strategy on Reduction of GHG Emissions from Ships. Resolution MEPC.304(72):https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.377%2880%29.pdf

watchkeeping requirements to enhance safety and professionalism among fishers worldwide.

Together, these conventions form the cornerstone of international maritime labour and safety standards, helping to safeguard workers' rights while promoting operational safety and environmental protection.

iv) Economic Governance and Trade Facilitation:

Economic objectives focus on ensuring fair competition and market efficiency, supported by organisations like the World Trade Organization and the United Nations Conference on Trade and Development. The Convention on Facilitation of International Maritime Traffic (FAL)[329] aims to streamline international maritime commerce through reduced bureaucracy and standardised procedures.

v) Legal Framework and Dispute Resolution:

UNCLOS establishes the legal framework governing all activities in the ocean and seas, setting out rules for the peaceful use of marine spaces, equitable and efficient utilisation of marine resources, conservation of living marine resources, and the protection and preservation of the marine environment.[330] It provides the rules for the delimitation of the different maritime zones, assigning rights and duties to the States Parties. It also provides mechanisms for the settlement of disputes , including access to arbitration and adjudication. This framework is complemented by specific international liability and compensation regimes, such as the International Convention on Civil Liability for Oil Pollution Damage (CLC)[331], which establish clear responsibilities for polluters and provide

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[329] Convention on Facilitation of International Maritime Traffic. 591 UNTS 265, as amended: Amendments to the Convention on Facilitation of International Maritime Traffic, 1965. Resolution FAL.12(40)

[330] UNCLOS implements the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (1836 UNTS 3) and Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (2167 UNTS 3) as well as the dispute mechanisms Statute of the International Tribunal for the Law of the Sea (ITLOS Statute), ICJ Jurisdiction (33 UNTS 993), including Annex VII arbitration with the Permanent Court of Arbitration serving as registry and following UNCITRAL-based procedural rules. Maritime boundary practices include bilateral agreements, tripoints, joint development arrangements, and provisional measures under UNCLOS Articles 74(3) and 83(3). The Convention's jurisdictional framework is established through several key sections: Part XV (Articles 279-299) provides a comprehensive dispute resolution system including choice of procedure (Art. 287), jurisdiction (Art. 288), provisional measures (Art. 290), vessel release (Art. 292), and optional exceptions (Art. 298); Part II (Arts. 2-32) addresses coastal state jurisdiction and bilateral delimitation (Art. 15); Part V governs EEZ jurisdiction (Arts. 55-75) and delimitation (Art. 74); Part VI covers continental shelf jurisdiction (Arts. 76-85) and delimitation (Art. 83); and Part VII (Arts. 86-120) regulates high seas freedoms and jurisdiction. See United Nations Convention on the Law of the Sea, opened for signature Dec. 10, 1982, 1833 U.N.T.S. 397 (entered into force Nov. 16, 1994).

[331] International Convention on Civil Liability for Oil Pollution Damage. LEG/CONF.9/15.

compensation mechanisms for damage caused by oil spills from tankers, ensuring that financial reparations are accessible to affected parties.

vi) Specialised Sector Requirements - specific policy objectives are applicable:

1. Cruise Sector: This sector prioritises passenger safety, particularly in emergency scenarios, with strict requirements for vessel design, evacuation procedures, and medical preparedness. Environmental impact management is critical due to the large volumes of waste, wastewater, and emissions generated by cruise operations, especially in ecologically sensitive areas. Sustainable tourism development is encouraged through collaboration with host communities to prevent over-tourism, respect cultural heritage, and ensure that local economic benefits are equitably distributed. Crisis management protocols, including pandemic preparedness and onboard outbreak control, have become increasingly central. Moreover, cruise lines are expected to engage with local stakeholders to align operations with community needs and environmental carrying capacity.

2. Ship Recycling: Ship recycling policies are geared toward minimizing harm to human health and the environment. The Hong Kong Convention[332] provides a structured framework for environmentally sound recycling practices, including certification schemes for recycling yards and training standards for workers. Throughout ship's operational life, it is subject to documentation requirements through the Inventory of Hazardous Materials, which must be maintained.. Although the Convention has triggered some positive effects globally since its adoption in 2009 through the investments for meeting the standards from the perspective of its entry into force, the Convention became only binding for its parties on 26 June 2025 and therefore, experience of its enforcement is nonexistent. Until then, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was the only international convention applicable to end-of-life ships.

3. Fisheries: Fisheries governance integrates science-based management approaches to ensure that fish stocks are harvested sustainably, and marine biodiversity is preserved. International instruments address IUU fishing by mandating catch documentation, flag State control, and port state inspection regimes. The frameworks encourage ecosystem-based management, precautionary approaches, and the regulation of bycatch and

[332] Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. SR/CONF/45 and the 2015 Guidelines for the Development of the Inventory of Hazardous Materials. Resolution MEPC.269(68). Adopted in 2009, the Convention became binding for its Parties in June 2025.

fishing gear. RFMO, such as ICCAT,[333] CCAMLR,[334] and IOTC.[335] play a central role in coordinating transboundary fish stock conservation and implementing quota systems, seasonal closures, and enforcement protocols tailored to regional conditions.

vii) Cross-cutting Themes - several themes appear consistently across these domains:

1. International Cooperation: Effective maritime governance requires collaborative monitoring, shared data repositories, joint patrols, and harmonised regulations to address transboundary challenges such as pollution, overfishing, and piracy.
2. Capacity Building: Many states lack the financial, technical, or institutional means to comply with complex maritime regimes. Capacity-building efforts include training personnel, funding infrastructure, and transferring best practices to bridge regulatory and enforcement gaps.
3. Transparency and Accountability: Mandatory reporting mechanisms, third-party audits, and traceability systems are crucial for ensuring compliance. Digital tools, such as electronic logbooks, satellite tracking, and open-access databases, enhance oversight and public trust.
4. Technology and Innovation: The adoption of green technologies, such as scrubbers, ballast water treatment systems, and energy-efficient ship designs, is promoted to reduce maritime emissions and ecological footprints. Digital innovations also support navigational safety and real-time regulatory compliance.

viii) Implementation Challenges - the effectiveness of these policy objectives faces several challenges:

1. Jurisdictional Complexity: The intersection of national, regional, and global legal instruments often leads to fragmented authority and inconsistent application, particularly in areas beyond national jurisdiction.
2. Resource Disparities**:** Significant differences exist in surveillance capacity, legal expertise, and maritime infrastructure, leaving some coastal and island states vulnerable to regulatory evasion and environmental degradation.
3. Economic Pressures**:** Industries often face conflicting incentives between adhering to strict environmental or safety standards and maintaining

[333] International Convention for the Conservation of Atlantic Tunas, 673 UNTS 63 : https://eur-lex.europa.eu/EN/legal-content/summary/international-convention-for-the-conservation-of-atlantic-tunas.html

[334] Convention on the Conservation of Antarctic Marine Living Resources, 1329 UNTS 47: https://treaties.un.org/doc/Publication/UNTS/Volume%201329/volume-1329-I-22301-English.pdf

[335] Agreement for the Establishment of the Indian Ocean Tuna Commission, 1927 UNTS 329: https://www.ofdc.org.tw:8181/web/components/Editor/IOTC/files/02_IOTC_NdianOcaenTunaCommission_E.pdf

profitability. This can lead to regulatory avoidance or underinvestment in compliance.

4. Evolving Threats: Emerging issues such as deep-sea mining, climate-driven ocean changes, autonomous vessels, and cyber threats to maritime infrastructure require continual regulatory adaptation and foresight-driven policymaking.

2.2. International frameworks undermined by FOC practices

The same approach of assessing the impacts of FOC on international policy objectives is applied here as was done for the EU international policy objectives. The main differences between EU policy objectives and broader international policy objectives lie in the EU's focus on specific regulatory standards and a detailed governance approach, as opposed to the more general principles that underpin the international ocean governance framework. EU policy objectives focus on high standards, strict enforcement and accountability in the safety, environmental, social, fiscal and security fields.

In contrast, international policy objectives often have lower standards of compliance, which reflects the needs and requirements of Least Developed Countries (LDC)[336]. While international frameworks establish minimum standards, enforcement is mainly dependent on flag State implementation. Weaknesses are often exploited by FOC, undermining global regulatory coherence and hampering international maritime governance efforts, as well as the EU's specific regulatory objectives and leadership. Initiatives like the Paris MoU and the FATF provide supplementary monitoring but cannot fully replace effective flag State control.

Table 30 provides an overview of the impacts of FOC on the main international instruments in selected international policy domains. The review by policy domain examines the impacts of FOC, uncovering the key mechanisms at play and identifying cross-policy linkages.

Policy Domain	Impact Description	Main International Instruments
Safety and Environmental Protection	Substandard vessel maintenance; increased maritime accidents; violations of pollution controls.	SOLAS (1974); MARPOL (1973/78); UNCLOS (1982); Paris MoU, Tokyo MoU
Social and Labour Conditions	Unsafe working environments; unpaid wages; lack of labour rights protection.	Maritime Labour Convention (MLC, 2006); ILO Conventions
Tax Good Governance	Facilitation of tax evasion and avoidance; financial opacity.	OECD Global Forum; BEPS Action Plan

[336] In order to secure the consent of LDC as Member States and to achieve unanimity in decision-making, international maritime fora may be prepared to accept a lower level of standards than those required by the EU.

Policy Domain	Impact Description	Main International Instruments
Legal Liability and Accountability	Complex ownership structures obscure responsibility; limited flag State enforcement.	UNCLOS (1982); IMO Guidelines
Sanctions Evasion	Circumvention of sanctions through reflagging; use of opaque ownership.	UNSC Resolutions; FATF Recommendations; UNCLOS (1982)
Fisheries Governance	Contribution to Illegal, Unreported, and Unregulated (IUU) fishing; depletion of fish stocks.	UN Fish Stocks Agreement (1995);[337] FAO frameworks; RFMO
Ship Recycling	Unsafe shipbreaking practices; environmental and health hazards.	HKC (2009); Basel Convention (1989)
Money Laundering and Financial Crime	Use of FOC jurisdictions for laundering illicit funds; limited financial oversight.	FATF 40 Recommendations; OECD Guidelines
Piracy and Maritime Security	Increased vulnerability to piracy due to weak flag enforcement.	UNCLOS (1982); Djibouti Code of Conduct; UNSC Resolutions on Piracy
Human and Drug Trafficking	Facilitation of illicit trafficking through minimal inspection and enforcement.	UN Palermo Convention (2000);[338] Protocols to Combat Trafficking

Table 30: Impacts of FOC in selected international policy domains

i) Safety and Environmental Protection

FOC registers often allow vessels to bypass stringent international safety and environmental standards, leading to substandard vessel maintenance, increased maritime accidents, and higher risks of pollution (e.g., illegal waste dumping, emissions breaches). Environmental degradation resulting from FOC-flagged vessels is a consequence of weak enforcement of regulations governing pollution, waste management, and emissions. Poor maintenance and non-compliance with international environmental standards allow ships to engage in harmful practices.

While international instruments such SOLAS and MARPOL set minimum safety and environmental obligations, enforcement remains dependent mainly on flag states themselves. PSC regimes offer oversight but cannot fully compensate for weak flag state control. The absence of a global enforcement authority leads to variable compliance and fosters conditions that permit the operation of substandard ships under FOC flags.

[337] The United Nations Fish Stocks Agreement (1995, in force 2001) supplements UNCLOS by setting rules for the conservation and management of straddling and highly migratory fish stocks, mainly through regional fisheries bodies and the precautionary approach.

[338] The United Nations Convention against Transnational Organized Crime (Palermo Convention, 2000) is a legally binding treaty that provides a comprehensive framework for preventing and combating organized crime, including protocols on human trafficking, migrant smuggling, and illicit manufacturing of firearms.

Contributing factors**:**

- Increased Pollution**:** Non-compliant ships often engage in illegal waste dumping and excessive emissions, resulting in broader environmental damage.
- Weak Enforcement**:** Many FOC jurisdictions have lax enforcement of international environmental treaties, further exacerbating environmental damage.

Impacts:

FOC actions result in the degradation of oceans, including marine biodiversity, which threatens coastal economies and global fisheries.

ii) Social, Training and Labour Conditions

FOC often allow substandard safety practices, resulting in seafarers aboard FOC-registered vessels frequently enduring unsafe working conditions, unpaid wages and insufficient labour rights protections. This results in unsafe working conditions and inadequate oversight for the protection of crew members.

Along with STCW, which established minimum standards of training, certification and watchkeeping, MLC establishes minimum working and living standards for all seafarers. In addition, the STCW-F Convention specifically addresses these issues on fishing vessels, which corresponds not only to the operational differences from other ships, but also the need for a focused and concerted action. These conventions are the main instruments related to the work and well-being of mariners. However, their effectiveness is hampered by flag States like FOC that fail to ratify them or lack the will to enforce their provisions.

Contributing factors**:**

- Lack of Oversight**:** Flag states with weak governance provide limited inspections, which allows unsafe ships to operate without consequence.
- Cost-Cutting Measures**:** In order to save money, FOC-registered vessels often avoid necessary safety upgrades and fail to adhere to international maritime labour standards (such as those set out in the MLC).

Impacts**:**

The exploitation of seafarers, including low wages, long working hours, and unsafe conditions, directly affects the attractiveness of the maritime profession and drives labour shortages, which in turn raises the costs for compliant operators.

iii) Fisheries and Marine Ecosystems

Under the UNFSA and FAO frameworks, the goals of international organisations and fora are to ensure sustainable management of marine living resources and effective compliance with conservation measures. FOC practices severely undermine these objectives by frequently failing to exercise due diligence in OR-flagged vessels. FOC often allow shipowners to avoid strict regulations, such as those created in the EU's SFPA or by RFMO. Vessels operating under FOC are often subject to different monitoring standards than are required for EU-registered vessels, raising concerns over compliance with conservation measures, reporting requirements, and quotas for maintaining sustainable fishing practices. This lack of control can, in turn, heighten overfishing and lead to the depletion of marine resources, undermining the EU's sustainability goals as well as those of international agreements.

The characteristics of FOC vessels make them ideal to engage in IUU fishing activities, as they are facilitated by lax standards relating to ownership and operation. IUU fishing further contributes to depleting fish stocks and damaging marine ecosystems. This is especially harmful in regions where overfishing has already pushed marine ecosystems to the brink. Despite the existence of international agreements such as the UN Fish Stocks Agreement (1995) and the efforts of RFMO, compliance remains patchy.

Contributing factors:

- Weak Monitoring**:** FOC rarely invest in robust monitoring and enforcement mechanisms of national and international/regional fisheries management regimes to ensure sustainable management of fish stocks and ecosystems.
- Overfishing**:** As a result, this contributes to the depletion of marine biodiversity and undermines global fisheries management efforts.

Impacts:

Overfishing by FOC vessels leads to the collapse of local fishing industries and harms coastal communities dependent on sustainable fisheries.

iv) Ship Recycling

When it applies to end-of-life vessels, the effectiveness of the Basel Convention, designed to control the shipments of hazardous waste, is weakened through the use of FOC. Selling and registering ships under less stringent flags before scrapping facilitates the circumvention of the obligation to ensure proper recycling conditions according the environmentally sound management principles. Certain flags offer specific short term/single voyage registration for negligible cost. Shipowners can easily declare that a ship will continue to be used and that it is not intended to be sold.

Many FOC-registered ships are often sent to shipbreaking yards that fail to meet minimum safety and environmental standards, exposing workers to hazardous conditions and creating significant ecological damage.

The HKC aims to address these issues but has only entered into force on 26 June 2025. Its enforcement and the effect on FOC cannot therefore be really assessed at this stage. Considering the HKC gives an important role to the flag State, one can however anticipate that vessels under FOC will be subject to weaker oversight and often sent to the facilities operating under weaker standards.

Contributing factors**:**

- Opaque Ownership**:** Complex ownership structures and lack of transparency on UBO enable shipowners to evade accountability for breaches of international regulations, making it challenging for authorities to pursue legal action or enforce sanctions
- Weak Monitoring**:** FOC rarely invest in robust monitoring and enforcement mechanisms of national and international regulations

Impacts:

- Toxic Waste Disposal**:** The improper disposal of hazardous materials such as asbestos and heavy metals at substandard shipbreaking yards contributes to environmental degradation and health risks for the workers and local communities.
- Labour Exploitation**:** Workers in shipbreaking yards frequently face unsafe working conditions, prolonged hours, and low wages due to the absence of effective labour protections.
- Market Distortion**:** This results in distorted competition, as non-compliant vessels undercut more expensive, law-abiding competitors.

v) Tax Good Governance

Within the OECD Forum on Tax Practices, the core objective is to promote tax transparency and combat base erosion and profit shifting. FOC registers facilitate tax evasion and avoidance by offering shipowners financial opacity, anonymity and minimal disclosure requirements on vessel ownership and beneficial ownership structures.

By obscuring the true control of maritime assets, FOC registers weaken global efforts towards financial transparency and undermine fair competition in shipping markets. International initiatives, such as the OECD Global Forum on Transparency and Exchange of Information for Tax Purposes and the BEPS Action Plan, seek to promote fiscal transparency and discourage harmful tax

practices. However, these initiatives are based on voluntary cooperation, and enforcement is inconsistent.

Non-cooperative jurisdictions, often hosting FOC registers, exploit these gaps, undermining global efforts to ensure fair tax contributions from maritime activities. Tax avoidance facilitated by FOC undermines the competitiveness of legitimate maritime operators in the global market, particularly within the EU. Ships registered in FOC countries are able to bypass stringent tax regulations and labour laws, creating an unfair competitive advantage.

Contributing factors**:**

- Tax Evasion**:** FOC-registered vessels often operate in jurisdictions with favourable tax rates or no tax obligations, allowing shipowners to avoid taxes that would otherwise support public services and infrastructure in their home countries.
- Financial Opacity**:** FOC states often offer anonymity and weak financial disclosure rules, allowing shipowners to obscure financial activities and evade international tax regulations.

Impacts:

- Market Distortion**:** This results in distorted competition, as non-compliant vessels undercut more expensive, law-abiding competitors, including those operating within the EU, reducing their ability to reinvest in more sustainable practices.
- Global Tax Injustice**:** FOC contribute to global inequalities in taxation, limiting the capacity of governments to fund public services and infrastructure.

vi) Global Governance and Legal Accountability

The abovementioned complex legal structures that obscure ownership also diminish accountability in cases of maritime accidents, environmental damage or labour violations. While UNCLOS establishes flag State responsibilities, it lacks direct enforcement mechanisms to ensure compliance. In practice, many FOC States fail to fulfil their UNCLOS obligations, leading to widespread impunity and the weakening of international regulatory frameworks ensuring maritime accountability.

As a result, the operation of FOC poses significant challenges to international legal frameworks and global governance initiatives, particularly in areas like maritime safety, labour rights, and environmental protection. The lack of accountability and transparency in FOC jurisdictions weakens international regulatory enforcement.

Contributing factors**:**

- Weak Legal Frameworks**:** FOC countries may lack the infrastructure and political will to enforce international maritime laws, such as the IMO conventions or the ILO labour standards.
- Opaque Ownership**:** Complex ownership structures enable shipowners to evade accountability for breaches of international regulations, making it challenging for authorities to pursue legal action or enforce sanctions.

Impact:

- Undermining International Efforts: The operation of FOC undermines efforts by organisations such as the United Nations and the IMO to enforce global maritime governance frameworks, hindering progress on climate action and the protection of social rights in the maritime sector.

vii) Money Laundering and Financial Crime

The financial opacity and lack of robust oversight associated with FOC jurisdictions make them a fertile ground for money laundering and other financial crimes. By enabling shipowners to conceal ownership, manipulate asset transfers, and move revenues through offshore entities, these registers create systemic vulnerabilities in the global maritime financial ecosystem. The minimal disclosure requirements, coupled with weak AML enforcement, undermine international frameworks aimed at transparency and financial accountability.

While the FATF has developed the recommendations as a global benchmark to combat money laundering, terrorist financing, and proliferation financing, implementation and compliance remain uneven across jurisdictions. Many FOC States fall short of aligning with these standards, either due to insufficient regulatory capacity or deliberate policies favouring financial secrecy to attract business.

Contributing factors**:**

- Lax Anti Money Laundering Frameworks: FOC jurisdictions often have underdeveloped or weakly enforce regulations against money laundering, failing to conduct effective due diligence or suspicious transaction reporting.
- Anonymity through Complex Structures: The use of shell companies, nominee directors, and offshore intermediaries obscures the origin and ownership of funds, facilitating the laundering of proceeds from criminal activities such as IUU fishing, trafficking, or sanctions evasion.
- Regulatory Arbitrage: Shipowners exploit mismatches in national regulations to move profits to low-tax, low-transparency jurisdictions, avoiding scrutiny and undermining financial integrity.

Impacts**:**

- Obstructing Global Financial Oversight: The ability to obscure financial flows weakens the ability of law enforcement and financial intelligence units to detect, trace, and prosecute maritime-linked financial crimes.
- Undermining EU and International Standards: The continued use of opaque FOC structures challenges the effectiveness of international frameworks, including the FATF, EU AML directives, and OECD tax transparency initiatives.
- Reinforcing Other Illicit Maritime Activities: Financial crime facilitated through FOC structures often overlaps with environmental violations, sanctions evasion, and labour exploitation, compounding governance failures across sectors.

viii) Piracy and Maritime Security

The use of FOC undermines global maritime security by weakening enforcement mechanisms and obscuring accountability. FOC States frequently lack the political will and/or operational capacity to police their fleets effectively, resulting in insufficient oversight of vessels engaged in or vulnerable to piracy, armed robbery, and other maritime crimes. This regulatory vacuum creates significant risks in high-traffic maritime corridors, particularly where regional enforcement is already strained.

While international instruments such as the Djibouti Code of Conduct,[339] the Yaoundé Code of Conduct,[340] and multiple UN Security Council Resolutions on piracy (e.g., UNSCR 2634) aim to coordinate responses to maritime threats, the effectiveness of these frameworks is undermined by the jurisdictional opacity introduced by FOC registrations. This complexity makes it harder to interdict rogue vessels, prosecute offenders, and attribute responsibility, thereby weakening deterrence.

Contributing factors**:**

- Limited Oversight by FOC States: Many FOC registers do not perform adequate monitoring or enforcement, leaving ships susceptible to hijacking or complicit in illicit maritime operations.
- Obstructed Enforcement and Jurisdictional Challenges: The use of FOC vessels complicates the identification of responsible parties during maritime security incidents, delaying legal and security responses.

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[339] See The Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden, also referred to as the Djibouti Code of Conduct: https://www.imo.org/en/OurWork/Security/Pages/Content-and-Evolution-of-the-Djibouti-Code-of-Conduct.aspx

[340] See Maritime security in West and Central Africa : https://www.imo.org/en/OurWork/Security/Pages/West-and-Central-Africa.aspx

- Safe Havens for Non-Compliant Operators: The low regulatory burden of FOC States attracts actors who prioritise concealment and non-compliance, heightening regional instability.

Impacts:

- Persistent Vulnerability in Strategic Sea Lanes: Key global shipping routes (e.g., Gulf of Guinea, Horn of Africa, Strait of Malacca) remain at elevated risk due to weak flag State enforcement and limited cooperation from FOC jurisdictions.
- Erosion of Multilateral Security Frameworks: FOC-related opacity reduces the effectiveness of international counter-piracy initiatives, challenging coordination between coastal States, regional organisations, and global actors.
- Undermining Rule of Law at Sea: The difficulty in attributing and prosecuting crimes committed by or against FOC-flagged vessels impairs the broader international legal framework governing maritime security.

ix) Human and Drug Trafficking

FOC-registered ships are often implicated in the trafficking of humans and narcotics, facilitated by minimal vessel oversight and regulatory inspections. The Palermo Convention and its protocols seek to combat trafficking activities, yet enforcement challenges, exacerbated by FOC opacity, hinder the ability of the international community to disrupt these illicit networks operating within the maritime domain.

x) Sanctions Evasion

FOC registers are commonly used to circumvent international sanctions by, first, enabling vessels to rapidly reflag to continue activities that have been prohibited,[341] and second, to evade control and enforcement thanks to the concealment of the identity of vessels and their owners. Vessels reflagging under FOC are frequently used to facilitate sanctioned trade, including arms shipments and illicit oil exports, particularly in contexts involving North Korea, Iran, Russia and other sanctioned entities. The lack of rigorous enforcement and vetting by FOC States enables sanctioned actors to maintain access to international shipping networks despite multilateral prohibitions.

This undermines the effectiveness of sanctions regimes established through United Nations Security Council (UNSC) Resolutions and aligned international frameworks. Although the FATF issues standards to combat the financing of

[341] Sanctions typically target individuals, companies, financial institutions, or government entities rather than ships themselves. However, ships may become indirectly affected when they transport sanctioned goods or are owned by sanctioned entities, leading to operational restrictions.

sanctioned activities, enforcement disparities and legal loopholes — such as the "innocent passage" provisions under UNCLOS — are exploited by actors seeking to evade trade restrictions and asset freezes.

Contributing factor**:**

- Sanctions Evasion: Ships can easily reflag to FOC countries to bypass sanctions where the FOC jurisdiction does not implement effective controls on ship ownership or cargo.

Impacts:

- Increased Security Risks**:** FOC vessels can engage in illicit trade, smuggling, or trafficking under the guise of legitimate commercial activities. This increases global security risks, requiring more intensive surveillance and enforcement efforts by international bodies.
- Undermining Geopolitical Stability: By facilitating trade with sanctioned entities or prohibited goods, FOC contribute to the erosion of international sanctions regimes and disrupt geopolitical stability.

Table 31 below summarises the impacts of FOC operations on the various international objectives and instruments. It clearly illustrates the interconnectedness of FOC operations across various policy domains. The impacts of FOC are not confined to a single area but span multiple sectors, influencing environmental protection, labour standards, taxation fairness, security and legal accountability.

Policy Domain	FOC Practices	Impact Description	International Maritime Policy Objectives	Cross-Sectoral Linkages
Safety and Labor Standards	Substandard Safety, Labor Exploitation	FOC enable ships to bypass safety regulations and exploit crew, undermining worker protection.	SOLAS, MLC, ILO Conventions.	**Environmental:** Unsafe ships can lead to maritime accidents, contributing to environmental risks. **Economic:** Reduced safety standards increase operational risks, affecting overall maritime industry stability. **Social:** Poor labour conditions exacerbate social inequalities and labour rights abuses.
Environmental Protection	Pollution, IUU Fishing, Substandard Ship Recycling	Ships registered under FOC often violate international environmental standards (e.g., MARPOL).	IMO MARPOL, UN Fish Stocks Agreement, ILO Conventions.	**Safety:** Lack of environmental protection contributes to the risk of maritime accidents and unsafe working conditions. **Economic:** IUU fishing and pollution reduce global fish stocks, harming economies dependent on marine resources. **Social:** Overfishing and pollution adversely affect coastal communities dependent on fisheries.

Policy Domain	FOC Practices	Impact Description	International Maritime Policy Objectives	Cross-Sectoral Linkages
Taxation and Market Fairness	Tax Evasion, Financial Opacity	FOC facilitate tax evasion, offering a competitive advantage to non-compliant operators.	OECD Base Erosion and Profit Shifting (BEPS) Framework, UN Financial Action Task Force (FATF) Guidelines.	**Economic:** Tax avoidance reduces government revenues, limiting investments in public goods and social welfare. **Social:** Tax evasion practices contribute to economic inequality and reduce government capacity for welfare programs.
Global Govern-ance	Lack of Legal Accountability , Obscured Ownership	FOCcontribute to weak enforcement of global maritime regulations, reducing accountability for violations.	IMO, UNCLOS, ILO Maritime Labour Convention.	**Environmental:** Weak legal accountability undermines global environmental protection efforts. **Social:** Lack of legal accountability exacerbates labour rights violations and exploitation. **Economic:** Inconsistent legal frameworks lead to uneven competition, favoring non-compliant ships and reducing market fairness.
Security and Sanctions Evasion	Circumvention of Sanctions, Smuggling, Piracy	FOCfacilitate sanctions evasion, contributing to illegal trade and the financing of criminal activities.	UN Security Council Resolutions (UNSCR) Guidelines, IMO.	**Economic:** Illicit activities undermine legitimate market operations and lead to trade disruptions. **Legal:** FOC create loopholes in sanctions regimes, complicating global enforcement efforts. **Social:** Facilitating smuggling or trafficking affects vulnerable populations and fuels global crime.
Fisheries	IUU Fishing, Overfishing	FOCcontribute to the depletion of marine resources through illegal, unreported, and unregulated fishing.	UN Fish Stocks Agreement, FAO Code of Conduct for Responsible Fisheries, STWC-F	**Environmental:** Overfishing leads to biodiversity loss and ecosystem degradation. **Economic:** The depletion of fish stocks due to overfishing and IUU practices undermines the long-term viability of the global fishing industry, leading to reduced catches, increased operational costs, and ultimately, the decline of fishing-dependent economies. In parallel, widespread tax evasion and underreporting of profits—often facilitated by FOC-registered fishing vessels—result in substantial losses in public revenue for both coastal and flag States, weakening the fiscal capacity to invest in sustainable fisheries management and maritime monitoring. **Social:** Overfishing directly impacts the livelihoods of small-scale fishers, particularly in developing and coastal regions where communities rely heavily on fisheries for employment, food security, and cultural heritage. The degradation of marine ecosystems and declining catches exacerbate poverty, reduce access to affordable protein sources, and fuel social instability, undermining local resilience and the EU's broader goals of social equity and sustainable development..

Policy Domain	FOC Practices	Impact Description	International Maritime Policy Objectives	Cross-Sectoral Linkages
Ship Recycling	Substandard Recycling Practices, Worker Exploitation	FOC contribute to environmental harm and poor working conditions in shipbreaking yards.	Basel Convention, IMO guidelines on ship recycling.	**Environmental:** Improper disposal of hazardous materials worsens environmental pollution. **Social:** Improper disposal of hazardous materials and exploitation of workers in shipbreaking yards leads to unsafe labour conditions. **Economic:** Higher revenues from selling end-of-life vessels to ship recycling facilities operating under sub-standards favors non-compliant ships, non-compliant ship recycling practices and leads to uneven competition
Money Laundering	Anonymity, Complex Ownership Structures	FOC enable illicit financial flows and the laundering of proceeds from illegal activities.	FATF Recommendations, OECD Common Reporting Standard (CRS), UN Anti-Corruption Convention.	**Economic:** Facilitating illicit financial activities weakens global financial systems and undermines market integrity. **Legal:** Money laundering linked to FOC creates challenges for global law enforcement and legal transparency.
Piracy	Weak Enforcement, Safe Havens	FOC contribute to the proliferation of piracy by reducing enforcement of maritime laws in high-risk areas.	IMO Maritime Security Regulations, UN Security Council Resolutions (UNSCR).	**Economic:** Piracy increases shipping costs, disrupts global trade, and impacts international shipping businesses. **Social:** Piracy puts seafarers' lives at risk, exacerbating the challenges of labour exploitation.
Trafficking	Human Trafficking, Drug Smuggling	FOC facilitate the trafficking of drugs and people by obscuring vessel ownership and cargo.	IMO Maritime Safety, UN Convention Against Transnational Organized Crime.	**Social:** Human trafficking leads to significant human rights abuses, including exploitation and abuse of trafficked individuals. **Economic:** Illicit smuggling disrupts global markets and leads to higher costs for enforcement and regulation.

Table 31: Cross-sectoral impacts of FOC operations

3. Cross-sectoral impacts on international frameworks and linkages across policy fields

Having highlighted the key linkages and mechanisms between various policy domains, we therefore identified a complex web of interrelated impacts that are influenced by the policies and practices of FOC countries. This section adopts a cross-sectoral approach to impact assessments, as we have seen that while FOC practices exploit regulatory weaknesses in one sector, this amplifies vulnerabilities in others, resulting in compounded challenges. It provides a detailed analysis of selected linkages, demonstrating how systemic vulnerabilities propagate across domains.

i) Safety, Environmental Deterioration and Economic Exploitation

FOC ships often avoid safety and environmental regulations, which leads to illegal waste disposal, excessive emissions, and IUU fishing. This avoidance is closely connected to economic exploitation through tax evasion and the use of cheap, underregulated labour.

Interrelated effects:

- Loss of Life and Safety Risks**:** Low safety standards increase the risk of vessel incidents, including shipwrecks, worker injuries, and abandonment, which negatively impact maritime transport reliability and the sector's public image.
- Environmental Damage: Poorly maintained vessels contribute to marine pollution, harming ecosystems and coastal communities dependent on fisheries and tourism. Failure to meet IMO safety standards exacerbates ecological degradation.
- Cost Reduction at the Expense of Sustainability: The exploitation of labour and the lack of environmental compliance enable shipowners to reduce operational costs, undermining international sustainability goals, such as those outlined by UNCLOS and FAO policies for responsible fisheries and environmental protection.

ii) Labour Exploitation and Maritime Safety

Labour exploitation on FOC-registered ships weakens maritime safety, as weak oversight by FOC jurisdictions fails to enforce international regulations, including the MLC and IMO safety standards.

Interrelated effects:

- Unsafe Working Conditions**:** Dangerous labour environments increase risks for crew members and maritime operations, undermining global efforts to promote safe and decent working conditions under ILO conventions.
- Higher Incident Rates: Inadequate safety enforcement correlates with higher shipwreck and pollution incidents, leading to disruptions in the global supply chain and undermining IMO conventions and international trade stability.
- Global Labour Market Distortions: Exploited seafarers are perceived as cheap labour, making protected workers less competitive. This undermines national social protection systems in labour-supplying nations and erodes compliance with ILO labour rights protections.

iii) Tax Evasion and Unfair Competition

FOC facilitate tax evasion, weakening financial integrity and creating unfair competition for shipping operators that adhere to stricter tax regimes and international economic regulations.

Interrelated effects:

- Unfair Competitive Advantage**:** FOC vessels gain a cost advantage by evading taxes and bypassing regulatory compliance, distorting international trade and challenging efforts by the WTO to maintain fair market practices.
- Depletion of Public Resources: Tax avoidance reduces government revenues, undermining investments in maritime infrastructure, environmental protection, and regulatory enforcement in both developed and developing economies.

iv) Undermining Global Governance and Rule of Law

FOC practices undermine international regulatory frameworks, including IMO, ILO, and FAO conventions, weakening global governance for maritime safety, environmental protection, and labour rights.

Interrelated effects:

- Erosion of International Regulations: Non-compliance with IMO and ILO conventions weakens global efforts to uphold high standards in safety, environmental protection, and labour rights.
- Impaired Multilateral Cooperation**:** Weak enforcement by FOC states diminishes the capacity for international cooperation, reducing trust in UNCLOS and other multilateral agreements.

v) Fisheries and Marine Ecosystems

IUU fishing by FOC vessels depletes fish stocks, contributing to environmental degradation from unsustainable fishing practices.

Interrelated effects:

- Ecological Damage: IUU fishing by FOC vessels contributes to the overall harm of marine biodiversity, contradicts the FAO Code of Conduct for Responsible Fisheries and undermines sustainable fisheries management.
- Threat to Coastal Economies: Declining fish stocks threaten the livelihoods of coastal communities dependent on fisheries and exacerbate socio-economic vulnerabilities.

vi) Ship Demolition, Environmental Harm, and Labour Exploitation

FOC practices lead to environmental harm and labour exploitation in shipbreaking activities, especially in jurisdictions with weak regulations.

Interrelated effects:

- Environmental Damage**:** Hazardous waste from shipbreaking pollutes marine and coastal ecosystems, contravening global environmental standards and sustainable development goals.
- Labour Exploitation: Workers face unsafe conditions in shipbreaking yards, reflecting broader violations of ILO occupational safety standards.

vii) Supply Chain Disruptions and Safety Violations

Weak safety standards on FOC vessels create vulnerabilities in global supply chains.

Interrelated effects:

- Accidents and Delays**:** Poor vessel maintenance increases the risk of maritime accidents, disrupting trade routes and resulting in financial losses for industries that rely on timely shipping.
- Increased Costs**:** Higher transportation costs and insurance premiums resulting from unsafe FOC practices exacerbate the financial burden on global trade, destabilising international economic systems.

viii) Sanctions Evasion and Global Security Risks

The use of FOC to evade sanctions contributes to broader maritime security challenges, including illegal trafficking and smuggling.

Interrelated effects:

- Facilitation of Illegal Activities**:** FOC vessels are used for piracy, human trafficking, and smuggling, undermining international security and enforcement efforts led by IMO and UNCLOS frameworks.
- Increased Enforcement Costs: Monitoring and enforcement efforts place additional strain on international regulatory agencies, weakening global efforts to combat maritime crime and secure international trade routes.

4. Assessment of the impacts of FOC on international frameworks and instruments

Based on the identification of key linkages across policy fields, this section assesses the severity of the impacts of FOC on international policy objectives.

Table 32 below provides a comprehensive tabular summary that examines the interconnected impacts of FOC practices across multiple maritime domains, evaluating their significance, linkages, and cascading effects throughout the industry. The assessment is structured across eight key domains, with each domain's significance indicated by a complete circle (●) for high significance or a half circle (●◯) for moderate significance.

Legend:

● : High significance/severe impact

●◯ : Moderate to high significance

◯ : Moderate significance

Involved Domains	Linkages (Cause-and-Effect Chains)	Interrelated Effects
Safety, Environmental Deterioration, and Economic Exploitation ●	Cost-cutting through reduced maintenance and inspections; poor compliance with environmental regulations	Increased maritime accidents, marine pollution, coastal environmental degradation, biodiversity loss; disruption to local economies reliant on tourism and fisheries; health impacts due to pollution
Labor Exploitation and Maritime Safety ●	Exploitation of seafarers due to weak labour rights enforcement; unsafe working conditions lead to higher accident rates	Human rights violations, declining worker morale, compromised vessel safety, reputational damage to the maritime industry; undermining social protection systems; worsening labour market conditions in sending countries
Tax Evasion and Unfair Competition ●◯	Use of tax havens and opaque ownership structures to evade taxes	Loss of government revenues, reduced funding for maritime safety oversight, distorted competition in global shipping markets; increased inequality; reduced investments in public health, infrastructure, and social services
Undermining Global Governance and Rule of Law ●	Minimal regulatory oversight in FOC states; legal opacity makes identifying responsible parties difficult	Evasion of accountability for accidents and environmental damage, legal impunity for non-compliance; undermines international development goals, governance, and rule of law; diminished international cooperation in health and environmental protection
Fisheries and Maritime Ecosystems ●	FOC vessels engaging in IUU fishing; weak monitoring and enforcement of fishing regulations; non-compliance with conservation measures	Depletion of fish stocks, damage to marine ecosystems, economic losses for coastal communities, undermining international fisheries management; food security risks for communities dependent on fisheries; loss of biodiversity affecting ecosystem services like carbon sequestration

Involved Domains	Linkages (Cause-and-Effect Chains)	Interrelated Effects
Ship Demolition, Environmental Harm, and Labor Exploitation ●	Non-compliance with ship recycling standards; use of substandard facilities	Pollution of coastal areas, occupational health hazards, exploitation of workers; long-term community health impacts
Supply Chain Disruptions and Safety Violations ○	Substandard vessel operations leading to delays and accidents; poor maintenance causing vessel detentions	Increased shipping costs, supply chain unreliability, economic losses for dependent industries, reduced confidence in maritime transport; disruption of global food and medical supply chains; economic instability and inflation; potential health risks from delayed deliveries of critical goods
Sanctions Evasion and Global Security Risks ●	Reflagging vessels to circumvent international sanctions; concealing cargo origins and destinations	Smuggling, arms trafficking, destabilization of trade, undermining of international governance frameworks; regional instability and insecurity; exacerbation of conflict-related health and food insecurity in affected regions

Table 32: FOC practices and their complex chains of cause and effect

Key patterns emerging from the table include:

1. Economic Impacts**:** FOC practices, such as tax evasion and undermining fair competition, create significant ripple effects in global economies. This includes weakening national tax bases, hindering governments' ability to fund critical services such as health and infrastructure, and fostering economic inequality.
2. Health/Sanitary Implications: Environmental degradation resulting from FOC practices, including ship pollution and IUU fishing, can have long-term effects on public health in coastal areas. Pollution from FOC vessels, including hazardous waste, has direct and indirect impacts on human health, particularly through contamination of food and water sources.
3. Food Security**:** The depletion of fish stocks and damage to marine ecosystems, driven by illegal and unsustainable fishing practices, directly affect food security in coastal communities that rely on fisheries for sustenance. The collapse of these local industries exacerbates poverty and undermines food sovereignty.
4. Social Protection Systems: Labour exploitation in the maritime industry, combined with poor safety conditions, affects seafarers' rights and increases the global labour market’s inequities. This, in turn, undermines efforts to achieve decent work conditions and adequate social protection for vulnerable populations.

5. Conclusion

The practices of OR used as FOC exert considerable influence, generating a complex network of interrelated challenges that undermine the effectiveness of international maritime policy. These practices erode the core principles of fairness, sustainability and accountability that underpin global maritime governance. The widespread adoption of FOC perpetuates a culture of minimum compliance, undermining the intent of international regulations and weakening collective efforts to address global maritime challenges holistically and equitably.

FOC allow for lax safety and labour standards, leading to significant deficiencies in oversight that increase the likelihood of environmental harm, such as oil spills and hazardous material discharge, causing widespread damage to marine ecosystems and contributing to long-term marine pollution. These incidents often have cascading impacts, affecting local communities, fisheries and coastal economies. Weak labour practices expose workers to hazardous conditions and exacerbate safety risks, creating feedback loops that result in higher costs for accident responses, legal disputes and inflated insurance premiums. Furthermore, substandard practices by a minority of operators tarnish the reputation of the maritime industry as a whole, eroding trust among global stakeholders and diminishing the sector's credibility as a vital component of international trade.

FOC exploit legal grey zones, enabling operators to evade accountability and undermining the integrity of international regulations. The fragmented nature of maritime jurisdictions allows operators to exploit discrepancies in enforcement, avoiding compliance with critical standards such as MARPOL and SOLAS. This results in an uneven playing field, where vessels registered under FOC gain a competitive advantage by minimising costs at the expense of safety, environmental sustainability and worker welfare. The systemic unfairness disadvantages operators committed to higher standards and discourages investments in responsible maritime practices. This impunity extends to other illicit activities, including smuggling and human trafficking, facilitated by the lack of stringent oversight.

The destabilising impact of FOC extends beyond individual vessels. FOC countries often facilitate tax avoidance schemes, depriving other nations of essential revenues critical for funding infrastructure, social programs and governance initiatives. Moreover, these practices create a veil of anonymity that obscures illicit activities, including sanctions violations, which erode global security and undermine financial stability. Such activities disrupt international trade and weaken efforts to combat transnational threats, ranging from organised crime to geopolitical tensions, further complicating the enforcement of international norms.

The EU international ocean governance agenda is directly impacted. The interconnected nature of policy areas across maritime sectors reveals the impacts of FOC, undermining key EU policy objectives.

Regarding safety and environmental protection, lax regulation in maritime transport permits FOC vessels to operate with minimal safety and environmental oversight and may not be subject to the same rigorous inspections or certification processes required for EU-flagged ships, compromising their safety. Focusing on cost-cutting measures often results in inadequate maintenance and training for crew members, which can endanger lives and property. This is particularly concerning as the EU has established high safety standards to protect the environment and the crew on board. This leads to marine pollution, either accidental or from routine operation (e.g. oil spills during ship-to-ship transfer, disposal of hazardous discharges and others), which harms marine ecosystems.

When FOC ships operate within EU waters, their activities can lead to significant environmental degradation, with direct spillover effects on vital sectors such as fisheries. Declining fish stocks and damage to marine ecosystems threaten the livelihoods of coastal communities that depend on sustainable fisheries and clean waters. Similarly, unregulated cruise ships—operating under FOC and often circumventing EU environmental and safety standards—contribute to excessive waste discharge and pollution, endangering both coastal ecosystems and public health.

This cascading environmental decline demonstrates how inaction or weak enforcement in one sector—such as maritime transport or cruise tourism—can undermine the integrity of the broader marine environment, ultimately jeopardising the EU's biodiversity goals and sustainability commitments.

Moreover, the absence of robust environmental oversight in many FOC States enables shipowners to evade liability in cases of pollution or maritime accidents. Due to the concealment of the UBO through opaque corporate structures, enforcement and claims for environmental damage often become stalled or unresolvable. This has financial implications: EU authorities and taxpayers are frequently left to bear the environmental and remediation costs, while insurers face difficulties in enforcing claims or recovering damages from liable parties hidden behind shell companies or offshore registers.

On labour rights, vessels registered under FOC in the maritime transport, cruise and fisheries sectors often evade core labour protections, enabling exploitative or unsafe working conditions where seafarers' rights are limited or absent. The EU seeks to address these challenges through the incorporation of international conventions, most notably the MLC, into EU law, and by applying enforcement mechanisms such as port State control under the Paris MoU. However, FOC continue to undermine the EU's labour policy objectives by lifting nationality requirements for crew, allowing shipowners to recruit seafarers from countries with lower wage and social protection expectations. While this practice can

generate income for labour-supplying States, often in the Global South, it weakens the enforcement of equitable labour standards globally and creates structural imbalances. EU-flagged ship operators, facing cost pressures, may be pushed to reduce labour protections, outsource crewing, or reflag to remain competitive, eroding the EU's own standards on social equity and fair competition. Furthermore, this reliance on low-cost, under-protected labour under FOC regimes contradicts the EU's broader goals of promoting decent work, safeguarding fundamental rights, and ensuring a level playing field across the internal market and global supply chains.

In terms of fair competition, the lack of regulatory oversight for FOC-registered vessels disrupts market dynamics across multiple maritime sectors, disadvantaging EU operators, who adhere to the EU's regulatory framework, and challenging the EU's efforts to foster a fair and equitable business environment. FOC ships across all sectors gain unfair economic advantages by avoiding compliance with environmental, labour, and safety regulations, allowing them to operate at lower costs. This enables FOC operators to undercut EU-based businesses, reducing the competitiveness of compliant EU operators and threatening the viability of EU-led maritime regulations. Similarly, FOC vessels facilitate the circumvention of the EU recycling regulations in the ship demolition sector by opting for cheaper, non-compliant demolition facilities operating with hazardous methods. This undermines EU objectives, which aim to safe and environmentally responsible dismantling practices.

Tax good governance is also compromised by widespread tax evasion. The use of transfer pricing by FOC shipowners, often facilitated through special-purpose vehicles in low- or no-tax jurisdictions, poses significant challenges to EU policies aimed at ensuring tax transparency and fairness. By enabling profit shifting, revenue underreporting, and expense overstatement, such practices erode the taxable base in countries where profits are genuinely generated. This undermines the EU's objectives of combating tax avoidance, safeguarding financial integrity and ensuring a fair tax contribution from the maritime sector, necessitating stricter regulatory frameworks and enhanced international cooperation to address these exploitative accounting tactics. Intricate networks of shell companies own many FOC vessels, frequently registered in multiple jurisdictions. This obscures the vessels' true ownership and operational structure, making it difficult for tax authorities to track profits and enforce tax laws effectively.

The under-taxation of FOC operators has multiple consequences. It extends across sectors. FOC-registered cruise ships and fishing vessels leverage similar tax evasion practices as the maritime transport, leading to cumulative losses that impact the EU's efforts to fund and enforce its maritime regulations. It diminishes the competitive fairness for EU operators who pay higher taxes, affecting their ability to invest in compliance and innovation. This tax disparity disproportionately affects EU Member States, reducing the funds available for public investments in social security systems, maritime safety initiatives, and environmental protection programmes. Ultimately, it undermines the stability of the international tax

system and the ability of governments to collect the taxes to which they are entitled.

Sanctions enforcement and security objectives are undermined by FOC ghost ships that evade international sanctions and engage in smuggling and other illegal activities. Unregulated ghost ships in the maritime transport sector often transport sanctioned goods, contributing to global black-market trade. This complicates EU security efforts by enabling organised crime, smuggling and unauthorised trade routes. Additionally, substandard shipbreaking facilities create a market for ship recycling where vessels linked to sanctioned entities can circumvent international law.

This, in turn, exacerbates environmental harm stemming from IUU fishing, pollution, hazardous waste release during shipbreaking, and maritime accidents. Taken together with tax evasion and financial manipulation that distort competition and reduce tax revenues for countries, these interrelated security, environmental and economic breaches weaken the EU's efforts in promoting international security, sustainable fisheries management and an effective governance framework.

This overall dynamic undermines the effectiveness of global governance frameworks, distorts fair competition, exacerbates environmental degradation, and endangers human rights and social development objectives. The extensive interconnections between policy fields demonstrate that isolated regulatory interventions are unlikely to succeed, as weaknesses in one domain inevitably compromise effectiveness in others.

In conclusion, these patterns point to a fundamental challenge in maritime governance: the need to address not just individual violations but the underlying structural incentives that make FOC practices attractive to operators. The economic distortions and enforcement challenges created by these practices suggest that effective reform requires a coordinated, multi-jurisdictional approach that can simultaneously address the safety, environmental, labour, and financial aspects of all maritime operations while ensuring the long-term sustainability of these industries.

Index of Terms

L

M

N

O

P

R

S

T

U

V

W

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