



Taming a globalized industry – Forces and counter forces influencing maritime safety



Petter Grytten Almklov^{a,b,*}, Gunnar M. Lamvik^b

^a NTNU Social Research, Trondheim, Norway

^b SINTEF, Trondheim, Norway

ABSTRACT

This paper analyzes changes in how regulatory authorities and actors within the industry navigate new challenges and new opportunities presented by globalization. Maritime transport has been one of the drivers of globalization itself, and ships in international passage have for centuries been operating outside the reach of national regulation. Still there are ongoing developments where further changes associated with globalization affect the safety in transport. For example, near coast shipping is increasingly conducted by ships sailing under flags of convenience. They operate along the coast, pivotal to the national economy, and represent a local risk, but they still sail largely beyond the reach of national regulators. This paper discusses challenges and dilemmas this represents for the regulators and the industry and how they work to improve safety in this situation. Based on a discussion of different forms of power three responses are analyzed: 1) The regulators' efforts to improve safety through international regulations, 2) how segments of the industry operate beyond a minimum compliance and how authorities influence this segmentation 3) how digitalization and international collaboration improve the regulators' knowledge and power to exercise their authority in a more directed manner. The paper support previous research contending that internationalization reduces the leverage for national regulators to uphold safety. Still, it also highlights some mechanisms and power-resources, seen in governance and practice, that still are not fully realized or formalized in policy.

Vignette, Tide Carrier – how breakdown reveals the complexity in maritime industry

The 22. of February 2017, the cargo vessel Tide Carrier faced severe engine problems outside the beaches of Jæren, in south west Norway. The ship had 20 crew members on board – mainly Indians and one Russian. There were strong winds and heavy seas, and the engine stopped about 400 m from shore. Despite obvious problems the crew did not ask for help in this situation. The Norwegian Coastal Authority (NCA) still mobilized, considering the uncontrolled ship an environmental hazard. After a challenging rescue operation, due to bad weather, the rescue team succeeded in towing the vessel into a safe preliminary port and eventually to a more permanent solution in a major port in the region.

Before this incident, the Norwegian Maritime Authority (NMA) had inspected the vessel in a Port State Control (PSC) revealing eight deviations, of which five were regarded as so critical that they could hamper the safe operation of the vessel. The vessel was given orders to repair these five nonconformities before they left the port. Most probably this was not done, according to the NMA.

Tide Carrier was built in Ukraine in 1989 and is 263 m long. The former owner was Eide Marine, a Norwegian company based in New Orleans, USA. At that time, the vessel had the name "Hickory", but it was later renamed to "Eide Carrier." As Eide Marine went bankrupt the

ship was sold in 2015 to Julia Shipping Inc in Charlestown on Saint Kitts and Nevis and is registered on Comoros, a flag that is blacklisted by Paris MoU and described as a flag of convenience. Nabeel Ship Management in United Arab Emirates, was the managing organization of the vessel. The name was "Tide Carrier" when it almost stranded at the beach in February 2017, but it has later on been renamed to "Harrier."

The vessel is currently classified by the Norwegian environmental authorities as waste and not given permission to leave the country. The vessel had 1500 m³ of bilge water on board, an amount that must be handled in certified institutions on shore. In addition, the inspections gave indications that the vessel was on its way to an illegal scrapping in Asia.

When a phenomenon breaks down, its constituting, often taken for granted elements are revealed. [5:113] illustrates this with his description of how an earthquake may do "an effective job in revealing the constitutive elements in this sociotechnical world." Similarly, the conundrum of who are responsible for a stranded ship, reveals several weaknesses with the regulation of maritime safety in a globalized industry.

The case with the Tide Carrier can also pave the way for such an analytic and de-constructive maneuver. A ship is a highly mobile means of production and may thus be hard to grasp and control for the regulators and authorities. A shipping company is often transnational, and

* Corresponding author.

E-mail addresses: petter.almklov@samfunn.ntnu.no (P.G. Almklov), gunnar.lamvik@sintef.no (G.M. Lamvik).

makes use of outsourcing, flagging out and complex ownership structures to avoid regulation. The ship itself spends much of its time outside the reach of regulators. Ensuring safety in maritime transport requires new ways of monitoring, accessing and influencing these zones beyond regulatory reach (Roe, 2013).

An important research task would be to uncover the various elements that constitute the Tide Carrier conundrum – similar to the way the earthquake illuminated the construction of land based infrastructure – but without that the vessel undergoes severe engine problems and experience a severe incident like the one from February 2017.

1. Introduction

The mega-trend of globalization, of markets, movement of goods and labor, and of regulation, leads to changes in the framework conditions for the actors with responsibility for safety in the transport sectors.¹ Based on an analysis of interview data from several projects on safety and safety culture in the Norwegian maritime industry, followed up by a targeted interview study on the effects and responses to globalization, this paper discusses some of the changes in how regulatory agencies and actors within the industry navigate new challenges and new opportunities presented by these changes. From a vantage point of the Norwegian maritime sector, it investigates practices by regulators and other national actors to use available power resources to influence maritime safety in a situation where there, arguably, are gaps in terms of policy and regulatory structures.

Shipping has a long history as an international business. International cargo transport has been, and still is, one of the drivers of globalization itself. Ships in international passage have for decades, even centuries, been operating outside the reach of national regulators and regulation. This has led to a poly-centric mode of governance, where rules are largely developed in international arenas, and where a variety of national, international, global and private actors as well as NGOs are parts of the regulatory apparatus. According to [32:423]; see also [33], however, this apparatus is outdated and in need of new approaches to absorb and accommodate the challenges presented by globalization. In terms of policy-making and structure, maritime regulation is lagging behind. This paper discusses some of the practices within the existing imperfect regulation, highlighting how different actors utilize their power resources to pursue improved safety in a globalized industry.

Though shipping has been global for a long time, there are still relevant developments in which further changes, associated with globalization of the industry, influence safety in transport. For example, near coast shipping between national ports in Norway is increasingly conducted by ships sailing under flags of convenience, with crews from low cost countries hired by third-party manning agencies. They operate along the coast, serve the national economy, and represent a local risk, but they still sail largely beyond the reach of national regulators. All in all, "this change within the industry may be seen as a consequence of an adaptation to a more [easy]² access to cheaper work force, and the regulations of the industry." [9]. Caught in a dilemma between economic interests, ambitions to maintain a viable maritime industry on one hand and the task of improving safety, the national regulators are seemingly paralyzed [39]. Their power to influence the industry is limited. How trends related to globalization affect near coast shipping, and how authorities and others are able to work with the safety levels in this context, is also the case around which our argument will pivot.

In this paper some of the challenges and dilemmas globalization represents for the regulators and the industry are discussed. Some of the

means by which actors in the maritime sector employ available power resources in their work to improve safety are discussed: 1) The regulator's efforts and strategies to effectuate safety improvements through international regulatory bodies and thorough international collaboration. 2) The development of segments of the industry that operate above compliance to international rules, why they come about and how authorities indirectly influence them. 3) Also some examples are given on how digitalization and international collaboration improves the regulator's knowledge, and hence power to exercise their supervisory authority in a more directed manner. In conclusion, the paper supports the argument forwarded in previous research that internationalization reduces the leverage and power available for national regulators to uphold and improve safety. Still, it is argued, there are counter forces: international collaboration and technological developments also provide some new mechanisms and power-resources that are still not fully realized, and national actors can influence the safety levels of some sectors of maritime transport through indirect means.

2. A global industry, a linchpin of globalization

While international trade on land had important impacts on early societies, such as the caravans carrying oriental goods to mediaeval Europe, and later on, railways and roads in modern societies, shipping has been a pivotal element in international trade for recent centuries and still is the one of the lifelines of globalization today. While air transport and the internet has brought the world together in new ways, the global distribution of labor in traditional industries is enabled by an ever more effective maritime industry. The bulk of the trade of raw materials, consumer goods, food, oil is based on maritime transport.

Ships in international trade move between countries, outside the boundaries of national states. They cross international waters, and can move between jurisdictions. While a factory, a farm or an oil field or, to take another transport system, a railway is fixed to one location and jurisdiction and thus cannot easily escape national regulation, ships are mobile and highly independent. The ship owner doesn't really need any specific country to make money. A ship is a perfectly mobile means of production. It is also, in contrast to for example airplanes that are also globally mobile, able to sustain itself in international waters for extended periods of time, and generally not dependent on specific infrastructures or support systems. Given this mobility the ship owner can choose which regulating regime the vessel belongs to. As a consequence of the global nature of shipping, regulation of shipping has largely based on international agreements. It is an international trade regulated primarily by international agreements, and has been so for more than a century. (See for example [15]; Roe, 2013) This has implications for the ways national regulators can influence safety in their own waters.

The prime responsible regulator for each ship is the Flag State, the state in which the ship is registered. This state is responsible for inspecting and certifying that the ship is compliant to the minimum requirements set by international bodies such as the International Maritime Organization (IMO) and the International Labor Organization (ILO). As the Flag States operate differently in their regulatory practice and their fees vary, several shipping companies have moved their ships to flags with laxer regulatory regimes, to more "convenient" flags, so called Flags of Convenience (FOCs). "Having taken the decision to flag out, companies continue to shift between registers to minimize costs and maximize profits" [37: 757]. Flagging out thus gives the owners the ability to choose among regulatory regimes for one that is most suitable for their business model.

The first examples of ships flagging out to avoid burdensome regulators were seen just after World War 1. It is common to state that Flags of convenience (FOCs) has its origin in the 1920s when, "American shipping companies began to register ships in Panama in order to avoid what were seen as burdensome crewing regulations in pertaining to US flagged vessels." [24,31: 125]; see also, [16] for a discussion of these concepts). Also, during the prohibition era ship owners started

¹ See Le Coze [26] for a recent discussion of globalization and safety, including a survey of some of the extensive literature on globalization.

² Spelling error in original.

employing non-US flags to circumvent the prohibition regarding serving alcohol. Thus, thirsty Americans could enjoy their alcohol in ships in international waters just out of reach of their authorities. Similar examples are seen today with ships providing abortions in international waters for women from countries where this is forbidden by law.

These first examples were gradually followed by the emergence “commercial registers” (Flags), offering “cheap registration to operators seeking to save money by regulatory avoidance” [7: 458] gathering momentum from the 1980s and onwards with several new registers emerging. As it caught on, flagging out to registers with lax regulation and inspection regimes has become the norm in international maritime transport, primarily to avoid costly regulation, some of which with relevance for safety. The term “Flags of Convenience” is often used to refer to registers that are mainly sought by ships that look for laxer regulation than what their countries of origin offer. FOCs reduce the powers of nation-states in terms of “taxing, owning, and regulating property; controlling competition; setting wage rates and working conditions; and providing environmental protection” [42: 359]. While some national registers, such as the Norwegian NOR register, have demands in terms of minimum wages and manning, the open registers put no additional restrictions or demands on top of the international rules. This incentivizes the utilization of crews from low cost countries, replacing the national crews from the traditional maritime nations. Many of the flag states with open registers are small nations, e.g. Panama, Comoros and Liberia, often with limited maritime competence. For these countries, operating an open register is a source of revenue.

Today, ships flying FOCs are a major factor in international shipping; “almost 73 per cent of all Dead Weight Tonnage now [in the 21st century is] represented by a foreign flag [24,31]. It is, however, emphasized by some of our informants and noted in the literature that these flags today, more so than in the early years of open registers, are not necessarily downplaying the importance of safety and regulation (see [8,15]). Thus, though there are reasons for concern regarding the fact that ship owners can elude strict regulators and move their ships to flags to laxer regimes also in terms of safety, one should be careful not to automatically assume that FOCs have lower safety levels. Though each ship is ultimately the responsibility of the Flag State, it is required to adhere to international standards. Thus, though the early years of flagging out represented a period of pro forma regulation, most Flag States today enforce a minimum of regulation and regimes of inspection to keep the ship in compliance with international standards. Though there are reasons for concern that one may see a “race to the bottom” also in terms of safety standards and that there has been examples of this historically, DeSombre [15] argues that there are incentives for the FOCs to avoid this and adhere to the minimum requirements in international regulation. For these flag states, but also for major shipping nations, third party inspectors and so-called classing societies, are important in the execution of these powers. Inspections mainly concern the ship's technical standard (set by the International Maritime Organization, IMO) and the working conditions (set by the International Labor Organization, ILO). For this paper, the demands set by IMO in the ISM code for the ship to have a working Safety Management System (SMS) is a requirement that is of particular relevance (see [1,38]).

As the insurance industry also needed to control risk in this mobile industry, they have historically depended greatly on classification societies. These are organizations with offices in the main harbors around the world, inspecting and certifying the standards of the ships. These also serve the flag states today. The insurance companies and their networks of third party consultants still play important roles for the regulation of the industry, and one can argue that much of international regulation (both in terms of rule development and forms of inspection) builds on these systems. In many ways, the insurance industry has an interesting and relevant role in the maritime industry. They are on one hand a supposed to understand and quantify the risk in the industry, and on the other play a crucial role to keep the risk as low as possible by involved themselves in the in training and informing the industry of

these risk factors.

In a sense, flagging out in international shipping is a typical example of globalization: global markets, the preference for a “level playing field” in terms of competition and high mobility leads to a reduction of the regulatory leverage for nation states. The ships can easily move from one jurisdiction to another, and national actors can do little about it, as long as the ship is not in their own national waters or ports. Even then, international conventions limit their authority. In principle, the ship is an international zone, even when it is docked.

As a response to the concerns regarding the conditions on board ships flying flags of convenience, the Port States have also been given some authority to inspect ships berthing in their ports, regardless of their flags. Again, the inspections are regulated by international standards and it is primarily the compliance with these that are inspected. There is generally little leverage to enforce additional demands on the ship on top of the minimal requirements set in IMO and ILO standards.

The project this paper is based on concerns how globalization processes in markets, competition and regulation influence transport safety in several sectors (maritime, air, road and railways) [36]. In this context international shipping is a very mature field. As a market, it has been global for centuries, competition from low cost flags and crews is hard, and global/international regulation is the norm. However, there are still ongoing processes that we can learn from, both in terms of how FOCs and the use of foreign crews is becoming more common in near coast national shipping, [9,41] and in how the authorities, transporters and customers respond to this. In the trade-offs between efficiency and safety there is a potential for a race to the bottom in shipping also with regards to safety, but there are also counteracting forces.

2.1. Globalization and Internationalization

The literature on globalization is diverse and multidisciplinary.³ Within risk research globalization has also been tied to the notion of the Risk Society [4], as the awareness of global threats such as nuclear disasters, natural disasters and climate change make it clear that risk does not heed national boundaries. For the purpose this paper the scope is narrowed to discuss how effects of global markets and competition, internationalization of the work-force global and global/international regulation influences shipping, mainly from a national perspective.

This can be summarized as:

- 1) Increasingly international markets and competition: both in the sense that foreign companies conduct transport within national economies and that parts of their services (e.g. crews) are hired on an international market.
- 2) Increased weight on international regulation (rule developments and inspection practices).

In addition, globalization is tightly related to the proliferation of new ICTs and new organizational forms (network organizations, often crossing international boundaries).

As shipping is very mature in terms of globalization, this paper primarily focusses its discussion on the globalizing processes in near coast shipping in Norway. That is, the increasing amount of internationally flagged ships and/or ships with international crews operating in areas previously dominated by ships sailing within the regulatory reach of the Norwegian authorities.

2.2. Regulation in a polycentric, globalized industry

A narrow understanding of regulation is the development of rules and the inspection of compliance to these rules to set and apply

³ See Le Coze [26,27] for an overview also discussing how it affects safety and Roe (2013:197ff) in relation to the maritime industry.

standards [23]. This is an understanding that works reasonably well to analyze national regulation of national industries. As has been suggested, the picture for the maritime industry is different than this. National authorities have clear limitations in terms of their means to exert influence on the maritime industry. They have a more limited role, as different parts of the regulation (both in terms of rule development and inspections) depends on several international, governmental and non-governmental actors.

The regulation of shipping is an example of what has been labelled “polycentric governance”, a form of governance “in which the state is not the sole locus of authority” [6:138], and sometimes have a peripheral role, and where decisions and measures are taken by actors that are not formally dependent of each other (see [30].) We see, particularly in the case of the open registers, that the concerned Flag State has a highly limited role in the regulation. The rules are produced in international agreements and the inspections and regulatory enforcement is predominantly conducted by third parties. Port states and coast states have an even more limited role in terms of regulating safety of ships in their national waters.

According to the policy making within this polycentric domain, suffers from several shortcomings, particularly when it comes to protecting public goods such as safety, security and the environment. These are issues “that the market would otherwise neglect” ([33]: 263). To respond to such challenges, he argues for models of policy making that to a fuller extent embraces the polycentric nature of the industry. A reconsideration of the current system of governance in its entirety would certainly be pertinent. This paper, however, addresses initiatives and practices toward protecting the safety of near coast shipping in which the actors employ the power resources available to them within the regulative system in order to improve safety.

To operationalize state influence in a polycentric sector one can, inspired by [3],⁴ regard the regulation of the maritime sector as consisting of three layers viewed from the coast state’s perspective: 1) The innermost is the direct regulation, regulatory activities consisting of rule development and inspections of compliance with these rules. At this level, it is clear that the national (port/coast state) authorities have limited leverage and control when it comes to rule development (as this is mainly an international activity), whereas they have some more leverage in terms of conducting inspections (port state controls). 2) The second layer consists of other forms of deliberate state influence, such as incentives, information campaigns, concessions etc. 3) The third level is other forms of social and economic influence, i.e. where non-state actors or companies themselves influence safety through non-regulatory means.

This perspective highlights that there is more to regulation than the formal direct regulation. Rather, one can regard it as ways of influencing the industry, in the context of this paper, towards upholding and improving safety.

2.3. Power and regulation

When discussing how safety levels can be influenced by different actors outside the industry themselves, dimensions of power are inescapable. Traditional definitions of power typically define it as the activities and abilities to influence others to do something that is against the initial preferences of these actors. As the global nature of the maritime industry provides opportunities for shipping companies to escape the direct influence of national regulators, it also represents a change in the power relations between these actors. However, power takes other forms than the manifest and explicit form of direct

⁴ Nilsen and Størkersen [29] employ Baldwin et al. [3] to compare maritime regulation to the regulation of petroleum activities in Norway. The latter is a regulatory regime where the authorities have a much greater influence as it control’s access to key resources for the means of production, oil licenses.

regulation. As Clegg writes in his preface to *Frameworks of power*, “[t] here is no thing as a single all-embracing concept of power per se but there are three groupings clustered around loci of dispositional, agency, and facilitative concepts of power.” [13]: xxv) Thus, interpreting the power shifts regarding the ways in which maritime safety can be influenced and improved, must also include different modalities of power. Put simply, though one can observe a distinct loss of power for national regulators to influence transport safety along the Norwegian coast, as ships are increasingly flagged out and operated outside their regulatory reach, other forms of less overt power may serve to counter these changes. The loss of power in the first modality of our understanding of regulation above, can to some extent be compensated by activities in the second and third.

The literature on discourse and power is vast and growing.⁵ This refers to the way certain structures in the ways we describe the world also influences what are valid ways of talking about a phenomenon, thus strengthening some perspectives and suppressing others. One of the authors has previously shown how the discourse of work in maritime regulation and in the railway sector changes power relations within these industries, as it systematically silences the practitioner’s perspectives [1]; see also [14]. Along a similar strand, there are power dimensions in the coordination and networks between actors (and as highlighted in the studies within Actor – Network theory,⁶ non-human actants as well). Another less overt form of power can be found in what Rosness and colleagues [34:21–32], in their highly relevant exploration of power perspectives on regulation, describe as the “resource perspective”. This refers to the fact that some actors control scarce resources that enable them to achieve their objectives without taking explicit actions to exercise this power. As will be illustrated in the discussion, this perspective is particularly salient to analyze more indirect ways for authorities and others to influence transport safety. In a recent paper, Nilsen and Størkersen [29] compare the differences between the regulation of the maritime industry and the petroleum industry in Norway. They observe that an underlying difference in terms of power between the petroleum authorities and maritime authority is the fact that the former control access to a highly limited resource, licenses to search for and extract hydrocarbons on the Norwegian continental shelf.

While not organized analytically primarily around power dimensions, several of the observations in [15], see especially page 217 and onwards) highly relevant book on FOCs fit neatly with the power as a resource perspective. One example is her discussion of how alliances and networks exercise control over scarce resources to influence maritime safety.

3. Methods and data

This paper builds on a prolonged engagement with the field of maritime safety in Norway and with key stakeholders in this respect. In previous projects on maritime safety in Norway our research group has studied how the maritime industry tries to improve maritime safety. In several of these projects it was observed that the main obstacles for such efforts are related to globalization: stronger demands for safety from the regulator could lead to ships flagging out or be in breach of international agreements. They could be in contradiction with political signals aiming to strengthen the national maritime industry’s ability to compete with foreign ships as well as other means of transportation. These conflicting demands amount to what Størkersen [39] coin a

⁵ See Foucault [18] and Fairclough [17] on discourse theory generally, and for example Rosness and Forseth [35] for an application on regulation of the petroleum industry.

⁶ For example, the emergence of obligatory passage points, is a form of power emerging in networked constellations not necessarily exercising power on behalf of specific actors [11].

"regulatory paralysis". Also, in these projects informants onboard ships lament the fact that a regulation built around international standards is too generic and bureaucratic to be of much use, particularly in the case of the safety management systems (the ISM code) [1,40]. Though not the main focus of these projects, the constraining effects of globalization on the ability to improve safety was everywhere. As a consequence, this paper is based on a new analysis of the interview data from these projects, now specifically directed at analyzing topics related globalization. This is combined with a selection of new interviews with key informants in the maritime industry. Both the selection of informants and topics for discussion were aimed at elaborating on the ongoing developments toward globalization in Norway and how they influence safety, and particularly towards strategies to counter the shortcomings of the regulatory systems faced with globalization.

To this end our project group analyzed 98 transcribed interviews with seafarers, regulators and others (ship owners, interest organizations, unions and experts) conducted in projects addressing maritime safety in Norway. A keyword search was conducted in the transcribed interviews to identify the most relevant ones, and these were studied in more detail and documented in a coded memo. Not all interviews were relevant. Roughly half of the reanalyzed interviews contained, for different reasons, little of value. Either effects of globalization were only mentioned in passing, or the observations were well known (data saturation). For example, though a few interviews of crews on high speed passenger crafts contained interesting reflections of the suitability of the ISM code for their work, most of these interviews added little to the analysis of internationalization, as this sector is little exposed to international competition. The remainder contained, to varying degrees, relevant observations about competition from low cost flags and crews and themes such as the ISM code and the relationship between the regulator and the industry.

To supplement and elaborate on the findings from this analysis of existing interview data, 12 new interviews were conducted with actors within the maritime industry in Norway: ship owner companies, regulator (The Norwegian Maritime Directorate, NMD), infrastructure providers (The Coastal Authority, NCA), customers and other key informants. All interviews were focused on changes in the Norwegian maritime industry associated with globalization, and how different parties may influence the safety level in the context of internationalization. The informants represented a variety of viewpoints and the structure of the interviews was tailored to this. Therefore, these interviews were transcribed and subjected to an interpretive analysis, rather than a systematic coding. This analysis was designed to identify and understand the current skirmishes of globalization today, and how safety concerns play a part in these. As such, these interviews expanded and elaborated the findings from the previous interviews. Preliminary findings from these analyses were also discussed in a workshop with representatives from the authorities. Some observations, particularly regarding the use of digital technologies to target inspections, have also been matured in discussions representatives from the NMA and NCA through a collaborative project on these issues (Kongsvik et al. [25]).

Some of the developments described here are well known in the literature, while other observations are more novel. It is no surprise that national authorities can influence IMO regulation through international arenas, that is how the system is intended to work, nor that the Port State control collaborations are intended to counter the uncertainties regarding the regulation of FOCs (observed e.g. by [8,21]). The data and analysis presented here elaborates on these practices, grounds them within a Norwegian context and place them in an analytical framework of a different modalities of power. In addition, some examples concern counter forces that are beyond the typical regulatory activities, and include actors and means of power that have not been previously analyzed to the same extent.

4. Counter-forces to the negative impacts of globalization

The developments described above present challenges for national authorities: How to avoid a downward spiral where competition drives the safety level downwards? Are there developments that contribute towards countering these problems?

The following sections outlines some counter forces, where national authorities and the industry seeks to employ existing resources to influence maritime safety. Some of these examples describe practices that occur within existing frameworks while others illustrate the potential of a more open mode of governance, where the power exerted by authorities and other invested parties takes more circumvent ways than direct regulatory influence.

4.1. National regulators influence international regulation

A cumbersome, yet important way for national regulators to influence safety is through their participation in international arenas where regulation is developed, which in most cases means the IMO. This has been described as frustrating by several of our informants as it involves several compromises and requires consensus among signatories. The overall picture from most of our analyzed interviews is that there was little to be done to change international rules. The role of the national regulator was largely to implement them and inspect them in a reasonable way. Our informants, both in shipping companies and among regulators, describe a situation where the international rules have precedence, and where the NMD are hesitant to place additional demands on ships. The informants from the NMD also say that political signals about keeping the Norwegian fleet alive also restricts their leverage to implement demands specific to Norwegian ships. An informant from the regulator explained:

«[...] this is an international business, so if we implement very strict demands, they will only take their vessels to Bahamas [register]. Then we achieve nothing. They just move.»

When they see shortcomings in regulation, even for quite trivial technical details, they lament that it takes time to bring it through international bodies.

«We had this thing with hooks for lifeboats. We saw that they weren't good enough. That was reported ten years ago and it was finally solved this year.»

So, generally the situation described by our informants is one where the national regulator largely enforces international rules, and have a highly limited leverage to influence them. Though rule change was hard to bring about, the upside is, as stressed by some of our informants, that the eventual impact of this work is global, that the cumbersome work with improving international regulation not only contributes to the improvement of the safety for Norwegian ships or ships in Norwegian waters.

«The main reason we have common rules is to prevent unfair competition. And then it is particularly important for us that we are able to raise the general safety level worldwide. We don't want different safety levels and that sub-standard ship owners go to sub-standard flags. It is not only that we are afraid to lose ships to other flags. Of course we want to have as much as possible under Norwegian flag, but this goes on the general safety level. It is our ships who operate around these ships that do not care that much. So it is important for us that everybody has a highest possible safety level.»

The informant discussed a recently completed process of implementing The International Code for Ships Operating in Polar Waters or commonly known as the Polar Code, that contains additional technical and operational demands put on ships operating in polar regions around the globe. Norway's role in this work was, quite naturally,

motivated by the desire to improve safety in Norwegian polar waters and along its polar coasts, but a side effect was that the improvements also reduced the risk in other polar regions. While this process is cumbersome and might be frustrating as many Flag States may have little interest in these extra demands, our informant described how they forged alliances and were able, after more than a decade to reach this goal. «Norway has a good reputation in IMO that we are prosperous and that we are good at getting the things we want.»

IMO has a principle of “tacit acceptance” as the amendment procedure for most of its conventions. “This means amendments to technical annexes of an IMO convention will enter into force after a certain period if a specified number of state parties do not oppose amendments within that period of time.” [28]. This principle, according to our informant, gave room for maneuver to implement codes such as this, as an alliance of interested parties could rely on a tacit acceptance of Flag States that were not affected by the code. So, though the general observation that the individual national regulators have limited influence over the rules regulating ships sailing along their coasts still stands, it is interesting to note some of our informants’ perspectives that it also gives leverage to influence safety on a larger scale. Also, our informant pointed to the importance of networks and alliances to improve international regulation. Building alliances to influence rule changes is an explicit strategy by the authorities that may serve to illustrate the power perspectives we outlined in the theory section: The loss of power to directly influence the industry, is met by counter forces by authorities searching for new means to influence it through alliances.

A second example might further illustrate this is the activities within the European initiative (including Canada and Russia)⁷ to improve the Port State Control (PSC) through the Paris Memorandum of Understanding. This is a direct response to the weaknesses in the Flag State principle, built on the recognition that the port states could not fully trust the inspection regimes in all flag states, and wanted to supplement them with additional controls. While the former type of networked efforts, such as the development of the Polar code, aims to influence the rule development, the primary focus of the Paris MoU is to leverage the port state controls in an effective manner.

The Paris MoU is primarily directed at improving the *inspections* as to whether a ship is compliant with the global IMO and ILO demands. When conducting inspections on ships berthing in national ports, the maritime authorities report the results internationally, to the Paris MoU institute. Through the Paris MoU, the signatories agree to harmonize their PSC practices and to exchange information to make these more effective. Again, this depends on alliances and network power. A single country, at least a small one, introducing a stricter PSC might be accused of protectionism and might meet retaliatory actions or experience that cost of transport to their ports increases. Interestingly, the US has singlehandedly enforced additional regulation and inspectorial practices for ships arriving at their ports. This can, at least partly be explained by the size of their economy and their general political power.

“As representatives of Norway as a port state we can board any ship as we please, but we do not really do that. But there is a system for example if the pilot gives us a notification about a ship that has some kind of issues, regarding maneuverability, the engine or the pilot’s ladder for example. Then we write a notification on it and class it as a P1 or P2 notification.”

While a P1 message means that the ship must be inspected. With a P2 notification they might or might not choose to board the ship. “And this P2, the PSC in Holland or Denmark will see it right away and assess whether they want to board it.” Later he goes on to describe how this goes both ways in the sense that they assess similar notifications on ships arriving from other countries.

“When a P1 boat arrives in Norway, we are required to board it. Then we access the system and look up that boat right away and look at what type it is and so on, and based on this we have a small picture of what we are about to board, and conduct an inspection according to that.”

He emphasizes “small picture,” indicating that these notifications are often relatively condensed descriptions of a problem, rather than lengthy reports. It is not only the pilots that might be sources for such notifications, they may also come from several other sources within our outside the NMD.⁸ The Port State Coordinator collects these reports and decides what to write in the joint Paris MoU system.

This is one example of how different eyes and ears, in Norway between among agencies, and throughout the Paris MoU, are coordinated to identify ships that should be inspected. As a group, the national regulators expand their powers through collaboration. Another aspect of the PSC is the exchange of information leading to a more effective inspection regime. They develop classes of ships based on risk assessments. Ships that have a history of nonconformities, ships from known substandard flags, from operators with a poor record or classed by poor classing societies, will be identified as objects of specific interest that will have more frequent PSC’s.⁹ An interesting effect of the systematic evaluation of past performance, also noted by DeSombre [15], is that flags and classing societies with poor performance will be subject to more inspections, thus making these less attractive for ship owners. From a power perspective the coordination between Port States improves their regulatory leverage, in the sense that their inspections become more targeted and uniform.

To sum up:

- The Polar Code is an example of how a national regulator, through a cumbersome process, can forge alliances to improve international regulation to better fit their concerns.
- The Paris MoU is an example on how the national regulators can build alliances to address the problem of flags of convenience with lax inspectorial regimes through concerted efforts in terms of inspections.

Next, we will see how the Paris MoU collaboration, in combination with developments in terms of tracking and data exchange may also have further consequences for the execution of the inspectorial role.

4.2. Digitalization countering the obscurity caused by internationalization

As a ship leaves port and sails off into the horizon, it also leaves the reach of the coast state regulators, and what goes on onboard is basically the responsibility of the flag state. This is a good example of one of the intrinsic problems with global shipping. It is a continuing challenge for national authorities to counter the obscurity of organizations operating in realms outside their control. This is further emphasized by fragmentation of the industry, illustrated by the Tide Carrier case and the reliance on contracted labor often from third party manning organizations. From the vantage point of his research on customs, Hesketh [22] points out that international supply chains have grown intricate to the extent that visibility has become obscure. Many of the arrangements seem primarily to be designed to avoid liability and transparency. Again, the Tide Carrier case serves to illustrate this problem with obscurity in the contracting chain.¹⁰ Both after the fact, and in terms of

⁸ Both the pilots and the vessel traffic service belong to the Coastal Authority, but report regularly to the NMD on issues like this.

⁹ See also Cariou et al. [12] for details on the target factors employed by the Paris MoU.

¹⁰ In Norway the frustrating investigation of the Scandinavian Star accident, a fire on a passenger ship in 1990 in which 159 passengers died, illustrated how

⁷ Similar regional constellations have been established such as the Indian MoU discussed by Cariou et al. [12].

prevention, it is hard to pin down who is responsible for a ship. In a sense, then, globalization causes at least two forms of obscurity that regulators need to confront 1) the complexity of the organizations involved leads to problems with regards to who is actually responsible and liable for the condition of the ship.¹¹ 2) the fact that the ship is mobile and can move between and beyond jurisdictions of different coast states.

There are developments that counter these issues too. We describe these as technical developments, but it is important to note that they are also technologies whose implementation is mandated by international agreements. Though the principles of governance have largely been unchanged the last decades, the proliferation of digital data strengthens the power of regulators in the sense that they are able to direct their attention and resources in a more precise manner. Our PSC informants' description of a seemingly seamless data exchange within the Paris MOU, builds on an evolving proliferation of joint or interconnected data systems.

First of all: All ships over a certain weight (300GT) are now required to carry AIS transponders. These register the position and vector of the ship and also report important meta data about the ship and its journey (including the ports it has been to and is destined for). As the AIS signal contains a unique identifying code, it can also be used to harvest further metadata from international ship registers. These transponders mean that the coastal administration and the national maritime regulators can track ships and gather much more information about them. Some of our informants suggested that they can now instigate port state controls based on strange sailing patterns (e.g. if a ship sails slowly it might indicate technical problems). Improved traffic monitoring also forms a promising basis for more targeted risk based inspections (see e.g. [10,19,25]).

Along a similar avenue of development, and partly connected to the Paris MoU network, arriving ships are now required to enter key information in joint databases that are subject to data exchange between the participating countries. The MoU organization operates a joint database of ships berthing in European and Canadian harbors. Again, this is not something that goes beyond the flag state principles or contradicts the international regulatory regime. It is just exchange of information enabling the coast states to exercise their inspections in a more targeted manner. While globalization reduces the power of the national states by obscuring the target of regulation, these developments counter this problem, by providing them more knowledge about the ships also when they are outside their waters. The proliferation of data, and the expanding data exchange between authorities, gives them more power in the sense that it reduces the possibility for ships and ship owners to sail under a veil of obscurity. Some of our informants also gave examples of more analogue forms of information exchange, cases were pilots or Vessel Traffic Service centrals (monitoring ship traffic) registered unusual behavior or had other concerns and reported these to the port of destination (Norwegian or foreign), thus leading to a PSC in that port. This, again, is greatly facilitated by systems such as AIS as these contain records for the port of destination.

Though increased knowledge through these sources of information improves the efforts of the national regulators, it doesn't change their formal leverage. For example, they may monitor ships that sail by outside the coastal zone, but they have a highly limited authority to enter these ships unless they go to port or into restricted areas (where pilots are needed).¹² This means that ships sailing by the coast without

(footnote continued)

the combination of flagging out and complex trans-national ownership structures made it impossible to place liability with any responsible owner of the ship.

¹¹ This is a problem that is largely shared with production of goods. There have been, for example, a lot of public interest in the working conditions for workers in the textile industry, and how this is obscured by contracting chains.

going to port are generally off limits.

To sum up:

- Digital technologies, AIS transponders and international data exchange helps the authorities countering the obscurity through improving their knowledge about the ships' whereabouts, sailing patterns, their cargo and destination.
- Collaboration between nations in data exchange and joint databases improves the targeting of inspections.

4.3. Authorities and companies countering the race to the bottom

One of the key drivers for globalization from an industry side, and concern from a regulatory side, is the reduction of cost, both in terms of crew cost and the ship conditions. When the transport market, also for national and regional transport, is exposed to international competition a major concern noted by several of our informants and prominent in the literature (is that there might be a "race to the bottom" that might harm the safety levels [15]¹³; [20]). Squeezing profit margins often means employing crews from low cost countries, reducing manning levels and increasing workloads for the crews, as well as using ships with poor technical standards or that are poorly maintained. As observed by Bloor et al. [8] segments of the industry may for different reasons choose to operate beyond compliance, i.e. to set the bar a bit higher for themselves, to appeal to specific customers.

Such segments of maritime transport operating "beyond compliance" [8] can also be observed in Norwegian waters. They have different histories and explanations, but can be partly attributed to the fact that the state, not necessarily the maritime authorities, possesses some scarce resources that provides an indirect leverage to influence the industry.

The first case in point is the Norwegian petroleum industry. Here, a powerful regulator of the petroleum industry has set the bar for the industry high with regard to safety for the industry as a whole. Accidents and nonconformities in all parts of the value chain will be closely associated with the company operating the petroleum production license. An accident involving a ship operating for a petroleum company will, regardless of flag, ship owner, management agency, will be attributed to this petroleum company. Hence, there are strong incentives for the petroleum companies, as buyers of transport services, to go beyond the minimal demands. There are also, through the regulation of the petroleum industry, certain additional demands for support ships (such as anchor handlers and supply boats) to have Norwegian speaking crews. In general, the petroleum industry sets the standards high from a safety perspective, with close monitoring and inspections, through so-called vettings. Superintendents representing the oil company board the ships and review the systems and the actual work practice of the crew, and describe necessary areas for improvement. These vettings are seen as a burden and a cumbersome part of the work on board among the crew on board, although it is positive for the safety situation on board. Some informants refer to these vettings as the "exams" of the crew as the superintendents try to measure and quantify the knowledge and competence in the crew. An informant from a chemical tanker company, described these inspection regimes like this:

"[T]he class society deals with the minimum of the class requirements. The oil companies, however, are a good deal more demanding and stricter. In addition to all these [inspections], the vessels are also subjected to Port state control."

¹² If a ship is clearly in problems, as in the case with the Tide Carrier, the Coastal Administration may, as responsible for emergency towing and rescue execute a rescue operation.

¹³ Discussing these concerns, DeSombre [15] also argues that there are counteracting forces, driving the "race" to the middle, rather than to the bottom.

Similarly, ships operating for the aquaculture industry, according to our informants, operate beyond the minimal requirements for maritime safety. Most of them also still carry Norwegian flags. Here too, the close association with an industry that is concerned with its public image, and which has a good economy, is prominent. The industry is somewhat controversial in terms of sustainability, as its pens may harm local fisheries and native wild salmon, and it is dependent on goodwill of the general public in the local communities and to preserve an image of sustainability to its customers.

Informants from ship owning companies operating for this industry eagerly stressed their commitment to maintaining the social contract with the local communities. Employing Norwegian, preferably local, crews was a part of this contract. Here too, regulators specific to the customers, such as the Food Safety Authority has some leverage over the ship management, not in terms of ship safety but as inspectors of the general quality management systems. Parts of this industry seek to live up to standards with regards to their production process that also necessitates quite systematic control routines. When asked about the regulatory regimes and inspections the informants from vessels operating for the aquaculture industry noted that the inspections from the NMD were much less burdensome than from other authorities.

“What the NMD demands is roughly the same as our customers, plus the fact that [from the customers] we get a lot more. [...] The rules have been there all the time, but it is the customers that have regulated and controlled us. We need to have everything in order for them to have everything in order.”

“The well boat and service boat business has been seen as some sort of cowboy business in previous times, but that has changed because our customers are regulated hard by the authorities and their own customers, and therefore we are regulated hard too. So the customers put strict demands on us. They are the strongest drivers to make us conscious of safety. The Maritime Authority, too, have become stricter. [...] But it is mainly the customers, due to certification schemes such as ASC and Global Gap¹⁴ and things like that are mainly about food safety.”

When asked where the customer demands come from he answers:

“Mainly Global Gap, ASC [food certification systems] and things like that. And then the Food Safety Authority have demands for hygiene and the Directorate of Fisheries on safety regarding escapes.”

The regulation is described as highly overlapping and often connected to external certification arrangements for aquaculture or food production. Their products are certified according to such non-governmental demands, that require extensive quality control along the production chain. Certification is a key strategy of the aquaculture industry to prove its food safety and sustainability throughout the value chain. Many large customers demand such certification. In addition, the vessels operating for the industry are also subject to inspections from the Food Safety Authority and the Directorate of Fisheries. All in all, though most of these inspections are *not* primarily focused on safety, they are systems-oriented, demand competence and high levels of accountability and internal control systems, to the extent that filling the requirements from the NMD seems unproblematic. Also, the high demands for quality management makes it unlikely to gain much from hiring foreign ships or crews. For the ship owners interviewed in this project, crews were mainly Norwegian, typically locally recruited, and this was, according to them, the norm in the industry. Due to the extreme focus on accountability and quality, maintaining continuity and

competence in the crews is seen as more important than cost.

The aquaculture sector is a young and booming industry with high revenues at the moment. The pioneers in fish farming started late 1970 and despite fluctuations in the fish and fish feed prices, it is characterized of very good margins and high profit as well as some controversy regarding food safety and environmental sustainability. So, besides factors as food safety, branding and local production, its strong economy makes it relatively easier to prioritize safety issues.

In both these industries the close association with the customer in the eye of the public (partly maintained through certification schemes) and governmental bodies forms incentives for the industry to operate beyond the minimal requirements in terms of manning and operation of the ships. This is partly instituted through the regulation of the customer's operations but it is also caused by a more generalized lack of acceptance for risk in the sector, as it may harm their reputation. This must also be seen in light of the fact that the Norwegian authorities control access to a scarce resource in the form of operating licenses both for the petroleum companies and for the aquaculture industry, incentivizing the industry to demonstrate control over their full value chain in order to get access to these.

A related, but more direct way of influencing the transport industries to operate beyond the minimal international demands is found in segments of passenger transport operating on specific, often subsidized, concessions. Here, the authorities, typically the counties, make additional requirements explicit in the bidding requirements. In these cases, the control of limited resources gives the authorities, though not the maritime regulator, power to influence safety.

While these cases do not refer to the direct regulatory power, in terms of regulation of the shipping industry as such, they illustrate that risk connected to maritime transport is influenced by the power associated with the national authorities' (and private companies' and customers') control of scarce resources. In this picture, the notion of reputation is also important, as the customers buying transport services are willing to pay for higher safety levels.

To sum up:

- These cases illustrate how segments of the maritime industry operate beyond the minimal demands found in international regulation.
- This is explained by factors beyond the maritime transport regulator's normal reach. Instead, we see that the customers buying transport services are willing to take on extra costs to keep a good standing in the public eye, and importantly, in the eye of regulators that control access to scarce resources that they depend on.

These cases show how influence to improve safety does not necessarily take the form of regulatory measures, or more precisely, regulatory measures within maritime transport as such.

5. Conclusion

Globalization represents challenges for the control over safety levels in maritime transport. This paper has discussed practices whereby the authorities and others counter these, ways that they seek to influence safety inside a regulatory regime that reduces their direct regulatory power. It has also illustrated developments in technologies and standards that improve their control in some ways. These represent a broader set of means at their disposal, some of which are themselves results of internationalization. To understand these developments, it is necessary to look at the states' role in a wider sense. They have means to influence maritime safety, for example through the control of scarce resources, that lie beyond the traditional maritime regulation. There are also developments within digitalization and information exchange that in some ways give them new forms of leverage. Our focus here on counter-forces to the negative effects of globalization is not an assessment of the total development. There are several reasons for concern for

¹⁴ ASC (Aquaculture Stewardship Council) and Global GAP (Good Agricultural Practices) are among several certification systems within aquaculture. Schemes like these put requirements of several aspects of the production chain to improve quality and sustainability. More on these and other certification schemes can be found in Amundsen and Osmundsen [2].

the possible consequences of FOCs and the employment of crews from low cost countries, and generally the possibilities for ship owners and customers to use the international nature of the industry to obscure the chains of accountability. There are simultaneous developments, forces and counterforces in different segments in the maritime sector. We observe that some see it as a competitive advantage or necessity to aim for standards beyond compliance to IMO regulation and to provide transparency along the chain of production, while other segments do not. In this paper we have sought to explain some of the reasoning behind these choices. This might inspire ways for authorities at large, not only maritime regulators, to search for ways to influence safety in maritime transport in the context of global competition.

Acknowledgments

The research for this paper was funded by the Norwegian Research Council's program TRANSPORT 2025 program (Grant no. 246864/O70). Thanks to the project group (including researchers in the previous projects on maritime safety), advisory board and user representatives for critical comments and fruitful discussions. There are too many to name all, but we would particularly like to thank Karlene Roberts and Rhona Flin for comments on the draft and Ragnar Rosness for contributions to the power perspectives in the analysis. The reviewer input was also highly useful for the finalization of the paper.

References

- [1] P.G. Almklov, R. Rosness, K. Størkersen, When safety science meets the practitioners: does safety science contribute to marginalization of practical knowledge? *Saf. Sci.* 67 (2014) 25–36.
- [2] V.S. Amundsen, T.C. Osmundsen, Sustainability indicators for salmon aquaculture, *Data Brief.* (2018).
- [3] R. Baldwin, M. Cave, M. Lodge, *Understanding Regulation: Theory, Strategy, and Practice*, Oxford University Press, Oxford, 2012.
- [4] U. Beck, *Risk Society: Towards a New Modernity*, Sage, London, 1992.
- [5] W.E. Bijker, Do not despair: there is life after constructivism, *Sci., Technol. Hum. Values* 18 (1) (1993) 113–138.
- [6] J. Black, Constructing and contesting legitimacy and accountability in polycentric regulatory regimes, *Regul. Gov.* 2 (2) (2008) 137–164.
- [7] M. Bloor, H. Sampson, V. Gekara, Global governance of training standards in an outsourced labor force: the training double bind in seafarer license and certification assessments, *Regul. Gov.* 8 (4) (2014) 455–471.
- [8] M. Bloor, H. Sampson, S. Baker, D. Walters, K. Dahlgren, E. Wadsworth, P. James, Room for manoeuvre? Regulatory compliance in the global shipping industry, *Soc. Leg. Stud.* 22 (2) (2013) 171–189.
- [9] R.J. Bye, G.M. Lamvik, Internationalization of domestic transportation systems and safety, *Proceedings of ESREL 2015*, 2016.
- [10] R.J. Bye, A.L. Aalberg, Maritime navigation accidents and risk indicators: an exploratory statistical analysis using AIS data and accident reports, *Reliab. Eng. Syst. Saf.* 176 (2018) 174–186.
- [11] Michel Callon, Elements of a sociology of translation: domestication of the Scallops and the Fishermen of St Brieuc Bay, in: John Law (Ed.), *Power, Action and Belief: a New Sociology of Knowledge?* Routledge, London, 1986, pp. 196–233.
- [12] P. Cariou, M.Q. Mejia, F.C. Wolff, Evidence on target factors used for port state control inspections, *Mar. Policy* 33 (2009) 847–859.
- [13] S.R. Clegg, *Frameworks of Power*, Sage, 1989.
- [14] S. Dekker, *The Safety Anarchist: Relying on Human Expertise and Innovation, Reducing Bureaucracy and Compliance*, Routledge, London, 2017.
- [15] E.R. DeSombre, *Flagging Standards: Globalization and Environmental, Safety, and Labor Regulations at Sea*, MIT Press Books, Cambridge, MA / London, 2006.
- [16] G.S. Egiyan, Flag of convenience' or 'open registration' of ships, *Mar. Policy* (14/2) (1990) 106–111.
- [17] N. Fairclough, *Discourse and social change*, Polity press, Cambridge, 1992.
- [18] M. Foucault, *The Archaeology of Knowledge*, Pantheon Books, New York, 1972.
- [19] A. Gilberg, E. Kleiven, R.J. Bye, Marine navigation accidents and influencing conditions: An exploratory statistical analysis using AIS data and accident databases. *Risk, Reliability and Safety: Innovating Theory and Practice: Proceedings of ESREL 2016* (Glasgow, Scotland, 25–29 September 2016), 97, 2016.
- [20] D. Gritsenko, Regulating GHG Emissions from shipping: local, global, or polycentric approach? *Mar. Policy* 84 (2017) 130–133.
- [21] C. Heij, G.E. Bijwaard, S. Knapp, Ship inspection strategies: effects on maritime safety and environmental protection, *Transp. Res. Part D: Transp. Environ.* 16 (1) (2011) 42–48.
- [22] D. Hesketh, Weaknesses in the supply chain: who packed the box, *World Cust. J.* 4 (2) (2010) 3–20.
- [23] C. Hood, O. James, C. Scott, G.W. Jones, T. Travers, *Regulation Inside Government: Waste Watchers, Quality Police, and Sleaze-busters*, Oxford University Press, Oxford, 1999.
- [24] Jillian Rickly, Kevin Hannam, Mary Mostafanezhad, *Tourism and Leisure Mobilities: Politics, Work, and Play*, Routledge, London, 2016.
- [25] T. Kongsvik, R. Bye, P. Almklov, E. Kleiven, The use of 'big data' in constructing loss-based performance indicators in the maritime industry. *Risk, Reliability and Safety: Innovating Theory and Practice: Proceedings of ESREL 2016*, 2016.
- [26] J.C. Le Coze, Globalization and high-risk systems, *Policy Pract. Health Saf.* 15 (1) (2017) 57–81.
- [27] J.C. Le Coze, An essay: societal safety and the global, 2, 3, *Safety Sci.* (2017).
- [28] N. Liu, Can the polar code save the arctic? *Am. Soc. Int. Law* 20 (7) (2016), <<https://www.asil.org/insights/volume/20/issue/7/can-polar-code-save-arctic>> (Web resource. Last downloaded Feb12, 2018).
- [29] M. Nilsen, K.V. Størkersen, Permitted to be powerful? A comparison of the possibilities to regulate safety in the Norwegian petroleum and maritime industries, *Mar. Policy* 92 (2018) 30–39.
- [30] E. Ostrom, Beyond markets and states: polycentric governance of complex economic systems, *Transnatl. Corp. Rev.* 2 (2) (2010) 1–12.
- [31] J. Rickly, K. Hannam, M. Mostafanezhad (Eds.), *Tourism and Leisure Mobilities: Politics, work, and play*. Routledge, London, 2016.
- [32] M. Roe, *Maritime Governance and Policy-making*, Springer Science & Business Media, London, 2013.
- [33] M.S. Roe, Safety, security, the environment and shipping: the problem of making effective policies, *WMU J. Marit. Aff.* 7 (1) (2008) 263–279.
- [34] R. Rosness, H.C. Blakstad, U. Forseth, Exploring Power Perspectives on Robust Regulation. Working paper. SINTEF Report A21367, 2011.
- [35] R. Rosness, U. Forseth, Boxing and Dancing. Tripartite collaboration as an integral part of a regulatory regime, in: P.H. Lindøe, M. Baram, O. Renn (Eds.), *Risk governance of offshore oil and gas operations*. Cambridge University Press, 2014, pp. 309–339.
- [36] R. Rosness, P. Almklov, T.E. Evjemo, G. Lamvik, H. Seter, T. Foss, Globalisering og transportsikkerhet. SINTEF Report 00070, 2018.
- [37] H. Sampson, Globalisation, labour market transformation and migrant marginalisation: the example of transmigrant seafarers in Germany, *Int. Migr. Integr.* 14 (2013) 751–765.
- [38] K.V. Størkersen, *Bureaucracy Overload Calling for Audit Implosion. A Sociological Study of How the International Safety Management Code Affects Norwegian Coastal Transport* (Ph.D. thesis), Norwegian University of Science and Technology, Trondheim, 2018.
- [39] K.V. Størkersen, Survival versus safety at sea. regulators' portrayal of paralysis in safety regulation development, *Saf. Sci.* 75 (2015) 90–99.
- [40] K.V. Størkersen, S. Antonsen, T. Kongsvik, One size fits all? Safety management regulation of ship accidents and personal injuries, *J. Risk Res.* 20 (9) (2017) 1154–1172.
- [41] Størkersen, K.V., Bye, R.J., & Røyrvik, J.O.D. Sikkerhet i fraktesfarten. Analyse av drifts- og arbeidsmessige forhold på fraktesfartøy. Report: NTNU Social Research (2011).
- [42] A. van Fossen, Flags of convenience and global capitalism, *Int. Crit. Thought* 6 (3) (2016) 359–377.