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**George Kiourktsoglou & Alec  
D. Coutroubis**

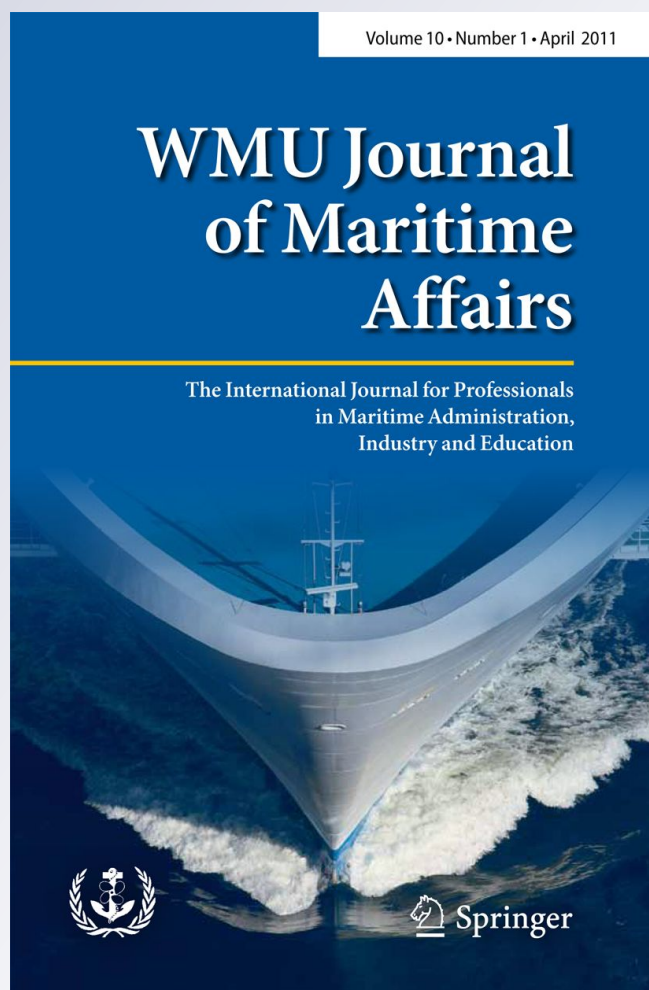
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# Is Somali piracy a random phenomenon?

George Kiourktsoglou · Alec D. Coutroubis

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**Abstract** This paper investigates whether Somali piracy is a random phenomenon. The investigation takes place in two distinct parts. Its statistical analysis spans over a period of 11 years, from 2000 until 2011 for the first part (flags), and 5 years, from 2007 until 2011 for the second one (crews). The reason is that although prior to 2007 there have been a substantial number of attacks (parameter used in the first part of the research), very few ships were practically pirated (parameter used in the second part) within the same period. Firstly, it is widely believed that Somali pirates select their targets at random and the decision on attacking a vessel registered under a particular flag is unrelated to the participation of the flag state in any of the naval forces operating around the Horn of Africa. The enquiry attempts to assess whether these two common beliefs are supported by historical data and to what extent. Secondly, this paper asks whether there are certain nationalities of crews which are for ethnic and/or cultural reasons more (or less) vulnerable to fall victims of pirates off Somalia. Such groups (if there are any) would in effect indirectly ‘support’ Somali piracy, and for this reason, they could be considered as ‘passively supportive crews’. The analysis focuses on the crew composition of the attacked vessels with special interest cast upon those ships (meaning the crews) which eventually succumbed to Somali pirates and were in the end seajacked.

**Keywords** Randomness · Somali piracy · Ship’s flag · Crew

## 1 Introduction

Piracy (United Nations Convention on the Law of the Sea 1982) is defined as follows:

Piracy consists of any of the following acts:

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- (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:
  1. On the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
  2. 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 inciting or of intentionally facilitating an act described in sub-paragraph (a) or (b).

Additionally, armed robbery against ships (Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery against Ships, International Maritime Organization 2000) is defined as follows:

Armed robbery against ships means any of the following acts:

- (a) 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 against persons or property on board such a ship, within a state's internal waters, archipelagic waters and territorial sea;
- (b) Any act of inciting or of intentionally facilitating an act described above.

On Thursday 4 March 2010 (Associated Press 2010), Somali pirates hit a Spanish fishing boat off the coast of Kenya with a rocket-propelled grenade as private security on board returned fire at the would-be seajackers. The successful defence of the fishing vessel *Albacan* illustrated two trends driving up the stakes for sailors and pirates off the Horn of Africa: Better trained and protected crews are increasingly able to repel attacks, but pirates eager for multimillion dollar ransoms are now resorting to violence much more often to capture ships.

According to an analysis by the London-based International Maritime Bureau, two thirds of attacks by Somali pirates are being repelled by crews alone, without the aid of the international coalition warships that patrol the Gulf of Aden. Most of the crews do not make use of armed guards either, a tactic of self-protection which seems to be increasingly appealing to ship owners. Throughout 2011, there has not been a single reported incident of a ship carrying armed contractors being hijacked in 58 instances (Statfor Global Intelligence 2011).

As it gets harder for pirates to capture ships, the Somali gangs are more likely to fire at sailors with automatic weapons in order to force vessels to stop. The International Maritime Bureau reports that only 7 ships were fired upon worldwide in 2004, but 110 ships were fired upon in 2011 off the Somali coast alone. That is up from 102 incidents in 2010 and within the same area.

Most crews now post extra lookouts, register with maritime authorities and practice anti-piracy drills. Increasing speed and manoeuvring, so that a ship produces more wake or heads into rough waves, can also make it more difficult for pirates. The attacks are becoming more dangerous for crew members though. In 2011 alone, more

than 190 of them were perpetrated using guns (instead of knives and/or machetes etc), including attacks on oil and chemical tankers.

Unfortunately many believe that 'off-the-shelf' solutions like barbed wire, high-pressure water hoses or even armed guards on board vessels can on their own effectively address the piracy scourge. This is a fallacy and a very costly, if not fatal, one. Only cooperation among all kinds of relevant authorities and market players can create the right environment for maritime security to come to fruition.

All in all, as the ancient Greek philosopher Protagoras put it squarely right some 2,500 years ago: "The man is the ultimate measure of everything...".

### 1.1 Literature review

Far from being an extinct phenomenon, piracy still exists in the modern world and is a growing menace to the security and safety of shipping. Results show that both flag of registry and type of vessel are significant factors in explaining maritime piracy. Attacks are clearly non-randomly selected (Mejia et al. 2009).

In order for piracy to occur, there must be available targets—sea traffic in the area where potential pirates might operate (Norwegian Institute for Urban and Regional Research 2009). Well-traversed straits are thus tempting for pirates. Keeping such geographical factors in mind, piracy in general is explained mainly by six factors: culture, exclusion and relative deprivation, poverty, organizational sponsorship, failure of legal and maritime counter-strategies, and weak/weakening state/institutional structures (Hansen 2008). These factors can in turn be divided into two sets: one set that includes poverty, organizational sponsorship, failure of counter-strategies and weak/weakening state/institutional structures tends to view piracy as a product of rational cost–benefit analyses conducted by the potential pirates.

The premises of two factors, cultural explanations or relative deprivation/exclusion are slightly different: cultural explanations focus on how traditions could contribute to the social legitimacy of piracy, while exclusion/relative deprivation will focus on the anger emerging after potential pirates have been denied access to benefits that they feel they are entitled to. The cultural factor, often mentioned in connection with Southeast Asian piracy, seems to be ill adapted as an explanatory factor in the case of Somalia. In the case of Somalia, the piracy traditions are weak, and thus lack the power to explain the relatively modern phenomena of piracy (Vagg 1995). This reflects a general problem with culturally based explanations. A culturally focused approach makes the claim that culture and piracy are connected, generally sees culture as something stable and fails to account for general changes in the frequency of piracy. For example, how can piracy increase when the culture remains stable?

The 'empty sea' theme is related to the poverty argument and the cost/benefit balance. It claims that the pirates simply have no alternatives. Due to overfishing the sea is said to have become empty. For Sauvageot (2009) the real cause of the fact that fishing activities were made impracticable for Somalis was illegal exploitation by foreign trawlers. It is hard to evaluate the amount and impact of foreign illegal trawling, and in-depth research, neglected since the 1970s, needs to be done. However, there are indications that the stocks are still large enough to supply local fishers and allow for export.

The view that ‘the illegal fishing started it’ seems to hold more promise. It suggests that piracy started out as a defensive measure taken due to illegal foreign fishing, which over time has turned into professional piracy. Ken Menkhaus states that piracy on the greater Gulf of Aden evolved as a defensive strategy against exploitation by foreign vessels. He notes that, in 1991, foreign fishing trawlers aggressively moved into Somalia’s rich and unpatrolled waters, at the expense of coastal fishing villages. Angry Somali fishermen secured weapons and began firing on foreign trawlers (Menkhaus 2009).

For Mohamed Waldo, piracy off Somalia is the product of the illegal, unregulated, and unreported (IUU) fishing by foreign trawlers or, as he terms it, foreign “piracy” since 1991 (Waldo 2009).

Several newspaper journalists and politicians have made the claim that piracy is caused by widespread poverty in Somalia (Minter and Volman 2009). The pirates are said to lack alternatives to piracy, a situation that pushes them into the piracy business, since alternatives to piracy simply bring too little gains, even too little to survive. While there are some important insights in this, these explanations also fail to explain notable traits of Somali piracy. Piracy is not a Somali problem; only some regions host pirate ports, while widespread poverty is common in the whole of Somalia.

There are no indications of change in poverty levels in Somalia, while there are drastic changes in the frequency of piracy. Some attempts to explain the changes in the frequency of piracy by referring to the 2004 tsunami and the destruction of maritime livelihoods seem more convincing. However, this fails to explain why an explosion of piracy took place in 2008; the increase simply came too late (Møller 2009). While recruits could be poor, the costs of running a group demand investment. Admittedly, the pirate groups surveyed up to now minimized their costs, often by putting pirate crews on commission (no prey, no pay). Additionally, some of the piracy attacks are little more than ‘a boat and two men’, some are subsistence pirates, part-time fishers and part-time pirates.

Although the forces of economic globalization have greatly diminished national economic barriers in the past four decades, labour is yet to enjoy the same global mobility that capital and finance enjoy (Gekara 2008). In the main, labour continues to be locally and nationally organized and the state still wields immense regulatory control through immigration restrictions across borders (Holton 1998). Other obstacles like cultural and language barriers, and variations in the education, training and qualification systems of different countries also restrict the international movement of labour (Lauder et al. 2006).

However, in shipping, the growth of the global labour market for seafarers has significantly increased the mobility of seafarers in the past few years (Wu 2004). Furthermore, the mobile nature of seafaring employment, combined with the international harmonization of training and certification in the profession and the use of English as the accepted international language of seafaring, defines seafaring in distinctive ways.

Ship owners have, over the years, designed crewing policies which enable them to increase their competitive advantage in terms of cost effectiveness. These policies direct their recruitment strategies and have, over the years, resulted in increasing the prevalence of seafarers from low-wage developing countries.



The worldwide supply of seafarers in 2010 was estimated to be 624,062 officers and 747,306 ratings (BIMCO/ISF 2010). The OECD countries (North America, Western Europe, Japan, etc.) remained an important source of officers, although Eastern Europe has become increasingly significant with a large increase in officer numbers. The Far East and Southeast Asia (the “Far East”), and the Indian sub-continent remain the largest sources of supply of ratings and are rapidly becoming a key source of officers.

## 1.2 Somali piracy (International Maritime Bureau 2011a, b)

Somali pirates attack vessels in the following areas:

- (a) Along the northern, eastern and southern Somali coasts;
- (b) In the Red and Arabian Seas;
- (c) In the western Indian Ocean (more than 1,000 nm away from the eastern Africa basin);
- (d) In the Gulf of Aden;
- (e) Off the coasts of Kenya, Tanzania, Seychelles, Madagascar and Oman and
- (f) In the straits of Bab el Mandeb.

From January to December 2011, there have been reports of 237 incidents carried out by suspected Somali pirates. The incidents varied in geographical location encompassing the waters already mentioned above. A total of 470 crew members have been taken hostage, 10 kidnapped, a further 3 have been injured and 8 were regrettably killed. There have been 160 attacks off the coasts of Somalia, another 37 attacks in the Gulf of Aden, 39 attacks in the Southern Red Sea and 1 attack off Oman. Twenty-eight vessels have been reported hijacked in this period.

As of 31 December 2011, suspected Somali pirates held 11 vessels for ransom with 193 crew members of various nationalities as hostages. Somali pirates attack all kinds of vessels: general cargo, bulk carriers, tankers, Ro-Ro, liners, fishing vessels, sailing yachts and tugboats.

The piratical activities peak each year from September until April and then their numbers start to drop due to the monsoons that prevail in the area. Around the clock, the most dangerous periods for piratical attacks are the dusk and the daybreak (International Maritime Bureau 2011a, b).

Over the years the Somali pirates have evolved in the use of weapons and in their tactics. Currently they are using automatic rifles and rocket-propelled grenades. They have also advanced from using dilapidated fishing boats to launch their attacks, to large pirated trawlers as mother ships to support smaller attack units.

## 2 First part: randomness of pirates' attacks based on the ship's registry

### 2.1 Major international registries (United Nations Conference on Trade and Development 2011 Report)

For the purpose of this paper, 20 major registries [in terms of tonnage they represent almost 80 % (78.2 %) of the World Tonnage] were selected to form (through the

numbers of their vessels) a reference statistical population. The numbers of ships are given in Appendix 2, Table 1.

## 2.2 Passages of vessels through the Suez Canal (Suez Canal Authority's annual reports, 2000–2011)

The passages of vessels through the Suez Canal were also taken into account. Their aggregate numbers were first compiled and then categorized based on the vessel's flag of registration (20 in total). It is worth mentioning that the numbers which are given in the corresponding statistic include total annual passage counts in both directions of the canal (Appendix 2, Table 2).

## 3 Do Somali pirates select their targets at random?

### 3.1 Structuring data and setting up a statistical model

For the purpose of the present analysis, two groups of registries were created. The first group comprises national registries (of sovereign states) which have naval presence (either directly or indirectly through an allied force) off the Somali Basin and in the broader area of the Gulf of Aden. The second group includes mostly the so called "open registries" which obviously do not have any naval presence off East Africa.

The first group includes the following 15 countries: France, Turkey, USA, Italy, China, Malta, Cyprus, UK, Panama, Denmark, Netherlands, Liberia, Norway, Greece and Germany (Appendix 2, Table 6). The second group includes the following six countries: St. Vincent and the Grenadines, Marshall Islands, Antigua and Barbuda, Hong Kong, Singapore and Bahamas (Appendix 2, Table 6). At this point it is worth explaining the rationale for the inclusion of Panama and Liberia in the group of countries that have Naval presence in the area, although the former have dispatched up to now no battle ships whatsoever.

On an international scale, Panama and Liberia are the flags with the highest numbers of registrations (Marshall Islands competes closely with Liberia; Appendix 2, Table 1). Although they do not include within their ranks their (nationally) owned fleets, they host certain national groups of ship owners which are 'over'-represented through the disproportionately high number of their vessel registrations (Appendix 2, Tables 3 and 4). At least 72 % of the Panama flagged vessels belong to nationals of countries that have naval presence around the Horn of Africa. Likewise, 73 % of the Liberian flagged vessels belong to nationals of countries that have naval presence around the Horn of Africa. Hence, it was decided to include these two registries in the first group.

For each registry the analysis took also into consideration (for the purpose of normalisation of the corresponding number of attacks) the total number of vessel passages through the Suez Canal (both directions) over the last 11 years (2000–2011; Suez Canal Authority, from 2000 until 2011; Appendix 2, Table 2). It is believed that for the analysis of Somali piracy, the number of vessel passages by registry is more appropriate than the global breakdown of registrations, as it actually reflects better the flag distribution of vessels physical present of vessels in the region.



Last but not the least, the total number of attacks that took place in the broader operational area of Somali pirates was recorded (against vessels of each registry) over the same time span as in the case of canal passages, i.e. from 2000 until 2011 (International Maritime Organization 2011, from January 2000 to December 2011; Appendix 2, Table 5). The statistical data are reported in Appendix 2, Table 6.

Based on this information, it was calculated that for the perceived 'low-risk' group (15 countries with naval presence off Somalia along with Panama and Liberia), the risk (probability) for their vessels to be attacked by pirates is on average 0.37 %, whereas for the 'high-risk' group (five countries without naval presence off Somalia) on average the risk (probability) is twice as high and equals 0.70 % (Appendix 3, Fig. 3). For the purpose of these calculations and for the case of each registry, the risk of piratical attack during the 11-year period (2000–2011) is expressed as the total number of attacks against all vessels from the particular registry divided by the total number of passages through the Suez Canal (both directions) of vessels registered under the flag.

### 3.2 Linear regression

To test whether there is a statistical link between the vessel's flag and the possibility of it being attacked, the data (Appendix 2, Table 6) were subjected to the test of linear regression (Appendix 1, Fig. 2). The number of attacks against the vessels of a specific registry was considered as a 'dependent variable', the annual number of vessel (of a given registry) passages through the Suez Canal as an 'independent variable' and the presence of the corresponding navy off the coast of Somalia as a 'categorical (dummy) variable'. The regression model yielded the following equation:

$$\begin{aligned} \text{Number of Attacks} = & 8.68 + 0.0021 \times (\text{Number of vessel passages through the Suez Canal}) \\ & - [8.13(\text{if the corresponding navy is present}) \text{ or zero} \\ & (\text{if the corresponding navy is not present})] \end{aligned}$$

The linear model features a very high correlation coefficient value of +0.88, and, given that a perfect correlation would yield the maximum value of +1.0, the formula appears to capture well the realities of piracy attacks in this region. Quantitatively, the model appears to provide a very reliable way of predicting the number of potential attacks against a registry's vessel given its aggregate number of passages through the canal and the participation (or absence) of the corresponding navy off the coast of Somalia and Aden. The linear formula 'punishes' the absence of a national navy by a factor of 8.13, which in simple terms means that a registry without naval presence will suffer statistically 8.13 more attacks than one whose navy is present.

## 4 Is there a nexus between a flag state's participation in a naval mission in the region and the number of new vessel registrations under that flag?

In the above analysis, evidence is being given using simple statistical manipulations that not all the ships run the same risk of being attacked off the coast of Somalia.

Panama (0.39 % risk of attack) and Liberia (0.35 %) have suffered the highest absolute numbers of attacks in percentage terms (taking into account the large number of vessels registered under these flags), but they appear to be (more than two times) safer than St. Vincent and the Grenadines (0.92 %), Marshall Islands (0.94 %) and Barbuda (0.81 %). In terms of risk of attack, these two registries rank along with Denmark (0.31 %), the UK (0.27 %), the Netherlands (0.24 %), Greece (0.23 %), Cyprus (0.40 %) and Malta (0.54 %).

Next an attempt is made to analyse the dynamics behind this 'risk profile'. It is suspected that the vessels of the 'low-risk' group share some common feature(s) that renders them less susceptible to attacks. As a next step, it is hypothesized that the feature of interest is the presence of the corresponding national naval forces off Somalia. The linear regression model seems to strongly support this hypothesis (correlation coefficient of 0.88). In line with the results of the regression analysis, it becomes evident that the pirates comparatively attack more vessels of the 'high-risk' group because, all other parameters being equal, these registries have no military presence (through their national naval forces) in the area.

A case of special interest is Panama and Liberia. These two registries feature the highest absolute numbers of attacks within the last decade, and they have been at the same time the leading international flags. Interestingly they include (72 % of Panama flagged and 73 % of Liberia flagged) ships whose owners are nationals of countries who have naval presence off Somalia. It is believed that this parameter is taken under serious consideration by pirates when they 'assess' their 'targets'. From a ship owner's perspective, whose vessels fly either of these two flags, it is argued that this fact is indeed a very fortunate reality. To put it in simple terms, it is claimed that the vessels with Panamanian or Liberian flag enjoy an 'unexpected privilege' in terms of their protection when they sail through Aden and off Somalia. A naval mission in the area is particularly expensive, and all countries with presence are currently rethinking their costs and potential ways to reduce them (Hellenic Shipping News Worldwide 2010). In line with the findings of the analysis, it is expected (all other parameters being equal) that a ship owner might positively consider in the future registering his vessel(s) under any of these two flags to take advantage (among other parameters) of a practically 'free' protection off East Africa.

## **5 Second part: relation between crew nationality and vessel's vulnerability to seajacking**

### **5.1 Cumulative picture of successful attacks of Somalia (January 2007–December 2011)**

For the purpose of the following analysis, a compilation has been created of all the successful vessel seajacks off Somalia (Table 7). The compilation includes the vessel's name, the date of the seajack and interestingly the breakdown of her crew in terms of nationalities. In total, 127 seajacks have been recorded from January 2007 to December 2011, and they feature a great variety in terms of the crew composition.

Based on the compilation, a matrix was produced of the crew nationalities of the vessels which eventually succumbed to the Somali pirates and they were taken to captivity (Table 8). It seems that mainly the citizens of the Philippines (26.14 %), India (9.77 %), China (6.59 %), Thailand (5.48 %), Ukraine (3.99 %), Syria (3.78 %) and Russia (3.65 %) bore the brunt of Somali piracy.

## 6 Comparative statistics on crews of seajacked vessels

In 2010 the Baltic and International Maritime Council in cooperation with the International Seafarers Federation published the 'Manpower 2010 Update' a report on "The worldwide demand and supply of seafarers". China was found to dominate the global seafarer labour market, with 10.4 % of the sample studied holding Chinese nationality. Turkey, the Philippines, Indonesia and Russia all constituted (through their citizen seafarers) a similar proportion of the sample (between 5 and 6.5 %) followed by India, USA, Ukraine, Bulgaria and Vietnam in descending order (Fig. 4a, b). These ten nationalities constitute 50 % (47.27 %) of the total sample.

By far the largest group of ratings by nationality is Chinese. Chinese seafarers constitute more than a tenth of all ratings. Their domination of the ratings labour market is significant, and all of the other nationalities, even in the top ten represented amongst ratings, can be considered to represent minor groupings by comparison.

Whilst seafarers from China dominate the labour market in the overall, their domination (compared with other nationalities) is more stringent with exclusive regard to senior officer positions. They remain the largest nationality group (both in absolute and relative terms) amongst senior officers; however, nationalities are much more evenly distributed in the senior officer category than they are in general. Chinese constituting roughly 12.1 % of senior officers are closely followed by Indonesians who account for almost 8.5 % of senior officers. Turkish, Russians and Malaysians account for approximately 4–7 % of senior officers each, and Filipino, Bulgarian, Sri Lankan, American and Indian officers are all represented at levels between 2 and 5.5 % (each). There is a greater variety of nationalities represented at senior officer level than there is across the board.

### 6.1 Conclusions on the relation between crew nationality and vessel's vulnerability to seajacking

Within the second part of this study, a comparison was undertaken between the crew nationalities of seajacked vessels and the same ethnic groups in the global seafarers' population. The analysis provided a good insight into the status quo in terms of vulnerability of crews (at least based on pure statistics). Interestingly, it also created some very intriguing questions, subjects for potential further research.

The most striking observation of all is that Filipinos are disproportionately represented within the seajacked population. Although globally less than one (6 %) of every ten seafarers is a Filipino, almost three (26 %) out of every ten crews come from the Philippines. This is a stonking statistic. The scope of this study does not allow for conclusions (let alone safe ones) on the reasons of the excessive vulnerability of Filipinos to Somali pirates. However one cannot disregard the fact that

within the international seafarers' population, this national group is the main victim of Piracy off East Africa. A similar but less striking statistical profile stands for Indian crews. They represent 10 % of the seajacked crews but only half as much, meaning 5 % of the international shipping crews.

On the contrary Chinese crews are 'underrepresented' (6 %) within the seajacked population compared to their percentage in the global seafarers' population (10 %).

Amongst secondary observations the following ones conspicuously stand out:

- (a) The five nations (Philippines, India, China, Thailand and Ukraine) that provide international shipping with almost a quarter (more than 24 %) of its seafarers bear the main brunt (52 %) of seajacks off the coast of Somalia.
- (b) Among 48 countries in the "seajacked" crew population from January 2007 until December 2011, seven out of every ten seafarers are citizens of ten countries (Philippines, India, China, Thailand, Ukraine, Syria, Russia, Turkey, Sri Lanka and Indonesia).
- (c) It seems that the presence of a country's Navy (India, China, Thailand, Russia and Turkey) off East Africa has no impact whatsoever on the number of its nationals that fall victims of pirates.
- (d) A remarkable observation though demands some extra attention: although more than one out of every four seafarers employed onboard seajacked vessels is a Filipino, this island country and indeed a maritime nation has no naval presence off Somalia.

## 7 Overall conclusion: 'is Somali piracy a random phenomenon?'

In 2011, 31 ransoms were paid to Somali pirates, totaling around US \$160 million (One Earth Future Foundation 2011). The average ransom was approximately US \$5 million, up from around US \$4 million in 2010. While 2011 saw a lower success rate for Somali pirates, the increased price of ransoms meant that pirates received greater revenue for fewer hijackings.

It would be fiendishly intriguing for such a profitable business to be purely random in its nature. So using mainstream statistics, this paper proves that Somali piracy is not a random phenomenon at least as far as the flags of the attacked vessels and the corresponding crews are concerned. However, the absence of randomness (and in the former case the proof of a rock-solid statistical correlation) does not necessarily entail the existence of causal link(s).

More specifically, Somali pirates seem to attack certain flags comparatively more than others. This fact debunks the theory of randomness but does not prove causality. In other words, the flag of a ship does not necessarily create risk of attack. However there is a very strong correlation between the former and the latter.

By the same token, Filipino crews are disproportionately vulnerable to Somali pirates. This fact does not imply (let alone) prove causality. However, it reveals an existing pattern which cannot be random. With statistical correlation proven, in both cases (flag of the ship and nationality of its crew in relation with the risk of Somali piracy), further research is needed to better understand potential causal links.

Appendix 1: figures



Source: Central Intelligence Agency, C.I.A., [https://www.cia.gov/library/publications/the-world-factbook/maps/maptemplate\\_so.html](https://www.cia.gov/library/publications/the-world-factbook/maps/maptemplate_so.html), [Accessed 24 February 2012]

Fig. 1 Map of Somalia. Source: Central Intelligence Agency (2010, accessed 24 February 2012)

**Linear Regression**

**StatTools** (Core Analysis Pack)  
**Analysis:** Regression  
**Performed By:** GEORGE KIOURKTSOGLOU  
**Date:** Friday, February 24, 2011  
**Updating:** Static

<i>Summary</i>	Multiple R	R-Square	Adjusted R-Square	SErr of Estimate
	0.95	<b>0.90</b>	<b>0.88</b>	5.64

<i>ANOVA Table</i>	Degrees of Freedom	Sum of Squares	Mean of Squares	F-Ratio	p-Value
<b>Explained</b>	2	4,900.91	2,450.46	<b>77.11</b>	<b>&lt; 0.0001</b>
<b>Unexplained</b>	18	572.04	31.78		

<i>Regression Table</i>	Coefficient	Standard Error	t-Value	p-Value	Confidence Interval 95%	
					Lower	Upper
<b>Constant</b>	<b>8.68</b>	<b>2.47</b>	3.52	<b>0.00</b>	<b>3.50</b>	<b>13.86</b>
<b>TOTAL PASSAGES</b>	<b>0.0021</b>	<b>0.00</b>	12.40	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>FLEET</b>	<b>-8.13</b>	<b>2.77</b>	-2.93	<b>0.01</b>	<b>-13.95</b>	<b>-2.31</b>

Fig. 2 Linear regression

**Appendix 2: tables**

**Table 1** Twenty major registries

Flag	Number of vessels	% Vessels	% Tonnage
Panama	7,986	7.72	21.93
Liberia	2,726	2.64	11.91
Marshall Islands	1,622	1.57	7.08
Hong Kong	1,736	1.68	6.57
Greece	1,433	1.39	5.12
Bahamas	1,384	1.34	4.83
Malta	1,724	1.67	4.39
China	4,080	3.95	3.78
Cyprus	1,014	0.98	2.32
Italy	1,649	1.59	1.39
Norway	521	0.50	1.29
Germany	931	0.90	1.26
UK	1,638	1.58	1.22
Denmark	524	0.51	1.02
Antigua and Barbuda	1,293	1.25	1.00
USA	6,371	6.16	0.91
Turkey	1,334	1.29	0.63
France	160	0.15	0.56
Netherlands	1,302	1.26	0.50
St. Vincent and the Grenadines	942	0.91	0.48
<b>Total</b>	<b>40,370</b>	<b>39.04</b>	<b>78.19</b>

United Nations Conference on Trade and Development (2009). Review of maritime transport from 2011



Somali piracy

**Table 2** Total passages of vessels (both directions) between 2000 and 2011 through the Suez Canal, grouped by flag

Flag	Passages
Panama	40,253
Liberia	23,481
UK	10,804
Malta	10,397
Germany	8,660
Hong Kong	8,469
Bahamas	8,467
Marshall Islands	7,261
Greece	7,020
Cyprus	6,737
Denmark	5,808
Norway	5,168
Antigua and Barbuda	4,337
USA	4,323
Italy	4,265
Netherlands	3,307
China	2,889
Turkey	2,850
France	2,756
St. Vincent and the Grenadines	2,402

Canal Suez Authority (2009). Annual reports from 2000 until 2011

**Table 3** Ownership of vessels registered in Panama

COUNTRY OR TERRITORY OF DOMICILE	2008		2009		2010	
	NUMBER OF VESSELS	%	NUMBER OF VESSELS	%	NUMBER OF VESSELS	%
JAPAN	2,236	54.5	2,292	53.3	2,294	52.8
CHINA	501	9.0	558	9.5	567	10.6
GREECE	511	8.8	503	8.1	457	7.6
KOREA	302	7.3	324	8.0	355	9.7
TAIWAN	296	4.5	332	5.3	321	5.1
GERMANY	39	2.2	95	3.1	31	1.4
HONG KONG	137	2.9	127	2.0	123	2.1
SWITZERLAND	32	0.3	32	0.3	27	0.3
<b>SUM</b>	<b>3,287</b>	<b>74.5</b>	<b>3,448</b>	<b>74.0</b>	<b>3,349</b>	<b>72.4</b>

**Countries with Naval presence around the Horn of Africa**

United Nations Conference on Trade and Development (2009). Review of maritime transport from 2008 until 2010

**Table 4** Ownership of vessels registered in Liberia

COUNTRY OR TERRITORY OF DOMICILE	2008		2009		2010	
	NUMBER OF VESSELS	%	NUMBER OF VESSELS	%	NUMBER OF VESSELS	%
<b>GERMANY</b>	<b>770</b>	<b>32.5</b>	<b>857</b>	<b>34.0</b>	<b>977</b>	<b>32.5</b>
<b>GREECE</b>	<b>360</b>	<b>20.2</b>	<b>387</b>	<b>19.9</b>	<b>437</b>	<b>21.5</b>
<b>RUSSIA</b>	<b>90</b>	<b>7.1</b>	<b>95</b>	<b>6.9</b>	<b>104</b>	<b>6.9</b>
SAUDI ARABIA	24	5.6	28	6.3	24	4.8
TAIWAN	84	5.8	92	6.2	80	5.0
<b>JAPAN</b>	<b>114</b>	<b>6.2</b>	<b>115</b>	<b>6.0</b>	<b>111</b>	<b>5.7</b>
SINGAPORE	39	4.0	36	3.8	36	3.4
<b>U.S.A.</b>	<b>122</b>	<b>3.8</b>	<b>105</b>	<b>3.2</b>	<b>54</b>	<b>2.0</b>
HONG KONG	59	3.4	60	3.2	69	3.4
<b>ITALY</b>	<b>43</b>	<b>2.5</b>	<b>48</b>	<b>2.5</b>	<b>51</b>	<b>2.5</b>
<b>NORWAY</b>	<b>41</b>	<b>2.2</b>	<b>49</b>	<b>1.9</b>	<b>45</b>	<b>0.7</b>
<b>U.K.</b>	<b>27</b>	<b>0.7</b>	<b>30</b>	<b>1.2</b>	<b>30</b>	<b>1.0</b>
<b>CHINA</b>	<b>15</b>	<b>0.3</b>	<b>12</b>	<b>0.3</b>	<b>13</b>	<b>0.3</b>
<b>SUM</b>	<b>1,582</b>	<b>75.5</b>	<b>1,698</b>	<b>75.9</b>	<b>1,822</b>	<b>73.1</b>

**Countries with Naval presence around the Horn of Africa**

United Nations Conference on Trade and Development (2009). Review of maritime transport from 2008 until 2010

Somali piracy

**Table 5** Attacks on vessels in the broader area off Somalia from January 2000 until December 2011

No.	Flag	Total number of incidents	Percentage of total
1	Panama	155	22
2	Liberia	82	12
3	Marshall Islands	68	10
4	Malta	56	8
5	Hong Kong	43	6
6	Antigua and Barbuda	35	5
7	UK	29	4
8	Cyprus	27	4
9	Bahamas	27	4
10	Italy	23	3
11	St. Vincent and the Grenadines	22	3
12	Denmark	18	3
13	France	17	2
14	USA	17	2
15	Turkey	16	2
16	Greece	16	2
17	Norway	16	2
18	China	14	2
19	Germany	9	1
20	Netherlands	8	1
Total		698	100

International Maritime Organization (2011), from January 2000 until December 2011

Table 6 Matrix of data

FLAG	CANAL	INCIDENTS	NAVAL	Risk Of Attack	Risk Of Attack
	TOTAL PASSAGES		FLEET		
France	2,756	17	1	0.62%	0.37%
Turkey	2,850	16	1	0.56%	
Italy	4,265	23	1	0.54%	
Malta	10,397	56	1	0.54%	
China	2,889	14	1	0.48%	
Cyprus	6,737	27	1	0.40%	
U.S.A.	4,323	17	1	0.39%	
Panama	40,258	155	1	0.39%	
Liberia	23,481	82	1	0.35%	
Denmark	5,808	18	1	0.31%	
United Kingdom	10,804	29	1	0.27%	
Netherlands	3,307	8	1	0.24%	
Greece	7,020	16	1	0.23%	
Norway	5,168	16	1	0.14%	
Germany	8,660	9	1	0.10%	
Marshall Islands	7,261	68	0	0.94%	0.70%
St. Vincent & Grenadines	2,402	22	0	0.92%	
Antigua & Barbuda	4,337	35	0	0.81%	
Hong Kong	8,469	43	0	0.51%	
Bahamas	8,467	27	0	0.32%	

(1) International Maritime Organization (2011), from January 2000 until December 2011; (2) Canal Suez Authority. Annual reports from 2000 until 2011; (3) E.U. NAVFOR Somalia

Table 7 Vessel seajacks off Somalia from 2007 until December 2011

INDEX	SHIP NAME	MONTH	YEAR	CREW MEMBERS
1	ROZEN	February	2007	6 KENYA / 6 SRI LANKA
2	DANICA WHITE	June	2007	5 DANEMARK
3	GOLDEN NOHI	October	2007	2 S. KOREA, 9 FILIPINOS (of which 1 was the Captain), 12 BURMA
4	SVITZER KORSAKOV	February	2008	BRITISH MASTER, IRISH CHIEF ENGINEER, 4 RUSSIAN CREW MEMBERS
5	LE PONANT	April	2008	22 FRENCH (Captain & Chief included) 6 FILIPINOS, 1 CAMEROONIAN, 1 UKRAINIAN (30 total)
6	AMITYA SCAN	May	2008	4 RUSSIAN OFFICERS, 5 FILIPINO CREW
7	LEHMAN TIMBER	May	2008	CAPTAIN RUSSIAN, 6 BURMESE, 4 UKRAINIANS, 1 ESTHONIAN
8	VENEGGA OCEAN	August	2008	11 NIGERIANS
9	IRENE	August	2008	1 SERB, 2 CROATIANS, 16 FILIPINOS
10	BBC TRINIDAD	August	2008	SLOVAKIAN CAPTAIN, 10 FILIPINOS, 2 RUSSIANS
11	AL MANSIRAH	September	2008	25 EGYPTIANS
12	GENIUS	September	2008	19 ROMANIANS
13	CENTAURI	September	2008	25 FILIPINOS
14	CAPTAIN STEFANOS	September	2008	17 FILIPINOS, 1 CHINESE, 1 UKRAINIAN
15	CARRE D'AS IV	September	2008	2 FRENCH CITIZENS
16	STOLT VALOR	September	2008	18-22 INDIANS, 2 FILIPINOS, 1 BANGLADESH, 1 RUSSIAN
17	GREAT CREATION	September	2008	25 CREW, 23 CHINA, 1 HONG KONG, 1 SRI LANKA
18	WAEIL H.	October	2008	9 SYRIANS, 2 SOMALIS
19	ACTION	October	2008	17 GEORGIANS, 3 PAKISTANIS (upon release 3 crew members were killed)
20	AFRICA SANDERLING	November	2008	18 FILIPINOS, 5 SOUTH KOREANS
21	YASA NESILIHAN	November	2008	20 TURKISH
22	CHEMSTAR VENUS	November	2008	11 RUSSIANS, 1 LITHUANIAN, 1 GEORGIAN
23	SIRIUS STAR	November	2008	25 TOTAL, 19 FILIPINOS, 2 POLISH, 2 U.K. (C. Engineer & S. Officer), 1 UKRAINIAN, 1 SAUDI
24	BISCAGLIA	November	2008	25 INDIAN, 2 BANGLADESHI
25	CFC FUTURER	November	2008	11 RUSSIANS, 1 GEORGIAN
26	DELIGHT	November	2008	7 INDIANS, 7 IRANIANS, 7 FILIPINOS, 2 PAKISTANIS, 2 GHANIANS
27	TIANVU N. 8	November	2008	15 CHINESE, 4 VIETNAMESE, 3 FILIPINOS, 1 TAIWANESE, 1 JAPANESE
28	KARAGOL	November	2008	14 TURKS
29	BOSPHORUS PRODIGY	December	2008	8 UKRAINIAN, 3 TURKISH
30	LONGCHAMP	January	2009	12 FILIPINOS, 1 INDOONESIAN
31	SALDANHA	February	2009	19 FILIPINOS, 1 UKRAINIAN, 1 INDIAN
32	NIPIVIA	March	2009	18 FILIPINOS, 1 RUSSIAN (Captain)
33	TTAN	March	2009	17 FILIPINOS, 3 GREEKS (Captain included), 3 ROMANIANS, 1 UKRAINIAN
34	BOW ASIR	March	2009	27 RUSSIANS (Captain Included)
35	MALASPINA CASTLE	April	2009	16 BULGARIANS, 4 FILIPINOS, 2 UKRAINIANS, 1 INDIAN, 1 RUSSIAN
36	PATRIOT	April	2009	15 FILIPINOS, POLISH MASTER, UKRAINIAN CHIEF ENGINEER
37	BUCCAFIERE	April	2009	10 ITALIANS, 5 ROMANIANS
38	MAERSK ALABAMA	April	2009	21 AMERICANS
39	TANIT	April	2009	5 FRENCH
40	IRENE E.M.	April	2009	22 FILIPINOS
41	HANSA STAVANGER	April	2009	5 GERMAN, 3 RUSSIANS, 2 UKRAINIANS, 2 FILIPINOS, 11 TUVALUANS, 1 FIJIAN
42	ALMEZAAAN	May	2009	18 INDIANS
43	ARIANA	May	2009	24 UKRAINIANS
44	VICTORIA	May	2009	11 ROMANIANS
45	MARATHON	May	2009	4 UKRAINIANS
46	CHARELLE	June	2009	7 SHRI LANKANS, 3 FILIPINOS
47	HORIZON I	July	2009	23 TURKS
48	AL RIHALIQ	October	2009	18 INDIAN, 2 BURMESE
49	LYNN RIVAL	October	2009	2 BRITISH
50	KOTA WAJAR	October	2009	5 SHRI LANKANS, 4 INDIANS, 2 SINGAPOREANS, 2 PAKISTANIS, 8 INDOONESIANS
51	DELVINA	November	2009	17 FILIPINOS, 7 UKRAINIANS
52	FILITSA	November	2009	19 FILIPINOS, 3 GREEKS
53	MAERSK ALABAMA	November	2009	21 U.S. NATIONALS
54	MARAN CENTAURES	November	2009	16 FILIPINOS, 9 GREEKS, 1 ROMANIAN, 2 UKRAINIANS
55	NAVOS APOLLON	December	2009	18 FILIPINOS, 1 GREEK
56	ST. JAMES PARK	December	2009	3 FILIPINOS, 3 RUSSIANS, 1 GEORGIAN, 2 ROMANIANS, 5 BULGARIANS, 2 UKRAINIANS, 1 POLISH, 6 INDIANS, 3 TURKS
57	PRAMONI	January	2010	17 INDOONESIANS, 5 CHINESE, 1 VIETNAMESE, 1 NIGERIAN
58	ASIAN GLORY	January	2010	10 UKRAINIANS, 8 BULGARIANS, 5 INDIANS, 2 ROMANIANS
59	RIM	February	2010	17 SYRIANS
60	AL NISHR AL SAUDI	March	2010	1 GREEK (Captain), 13 SHRI LANKAN
61	UBT OCEAN	March	2010	21 BURMESE
62	FRIGIA	March	2010	19 TURKISH, 2 UKRAINIANS
63	TALCA	March	2010	23 SHRI LANKANS, 1 FILIPINO, 1 SYRIAN
64	ICEBERG I	March	2010	1 FILIPINO, Yemen, India, Ghana, Sudan, Pakistan (24 TOTAL) / Missing Info
65	YESHYA KALVAN VRL	April	2010	Missing Info
66	JHH CHUN TSAI	April	2010	TAIWANESE CAPTAIN, 2 CHINESE, 11 INDOONESIANS
67	SAMHO DREAM	April	2010	19 FILIPINOS, 3 RUSSIANS, 1 UKRAINIAN
68	RAK AFRIKANA	April	2010	23 CHINESE
69	PRANTALAY 11	April	2010	26 THAIS
70	PRANTALAY 12	April	2010	25 THAIS
71	PRANTALAY 14	April	2010	26 THAIS
72	VOC DAISY	April	2010	21 FILIPINOS
73	AL-ASA 7	May	2010	6 YEMENIS
74	MOSCOW UNIVERSITY	May	2010	23 RUSSIANS
75	TAI YUAN No 227	May	2010	9 CHINESE, 7 KENYANS, 3 VIETNAMESE, 3 FILIPINOS, 2 MOZAMBIQUES
76	MARIDON MARGUERITE	May	2010	13 INDIAN, 3 BANGLANDESHIS, 1 UKRAINIAN
77	PANEGA	May	2010	15 BULGARIANS
78	ELENI P	May	2010	23 FILIPINOS, 2 ROMANIANS, 1 INDIAN
79	AL JAWAT	June	2010	5 YEMENIS
80	QSM DUBAI	June	2010	24 (Egyptian, Pakistani, Bangladeshi and Ghanaian) / Missing Info
81	GOLDEN BLESSING	June	2010	19 CHINESE
82	MOTIVATOR	July	2010	18 FILIPINOS
83	SUEZ	August	2010	11 EGYPT, 4 PAKISTAN, 2 SHRI LANKA, 6 INDIA
84	SYRIA STAR	August	2010	22 SYRIA, 2 EGYPT
85	ASPHALT VENTURE	September	2010	15 INDIA
86	OLIH G	September	2010	18 GEORGIA, 3 TURKEY
87	GOLDEN WAVE 305	October	2010	2 KOREANS, 2 CHINESE, 39 KENYANS
88	IZUHI	October	2010	20 FILIPINO
89	YORK	October	2010	14 FILIPINOS, 2 UKRAINIANS
90	CHOUZIL	October	2010	2 SOUTH AFRICA
91	AL NASER	October	2010	1 GREEK (Captain), 13 SHRI LANKAN
92	POLAR	October	2010	1 GREEK, 4 MONTENEGRO, 16 FILIPINOS, 1 ROMANIA
93	ALY ZOULEFCAR	November	2010	1 TANZANIAN, 4 COMORIAN, 1 MADAGASCAR
94	OR. SIRICHAINAVA II	November	2010	25 THAI, 4 YEMENI
95	HANNIBAL II	November	2010	23 TUNSIANS, 4 FILIPINOS, 1 CROATIAN, 1 GEORGIAN, 1 RUSSIAN, 1 MOROCCAN
96	YUANG XIAN	November	2010	29 CHINESE
97	ALBEDO	November	2010	7 PAKISTAN, seven sri lankan, 5 bangladeshis, 2 indians, ONE IRANIAN
98	JAHAN MONI	December	2010	26 BANGLADESH
99	MSC PANAMA	December	2010	23 MYANMAR
100	RENUAR	December	2010	24 FILIPINOS
101	ORNA	December	2010	1 SHRI LANKA, 18 SYRIANS
102	THOR NEXUS	December	2010	27 THAI
103	SHUHFU No.1	December	2010	13 CHINESE, 12 VIETNAMESE, 1 TAIWANESE
104	EMS RIVER	December	2010	1 RUSSIAN, 7 FILIPINOS
105	VEGA 5	December	2010	12 MOZAMBIICANS, 1 INDOONESIAN
106	BLIDA	January	2011	17 ALGERIANS, 6 UKRAINIANS, 2 FILIPINOS, 1 INDOONESIAN, 1 JORDANIAN
107	AL MUSA	January	2011	14 INDIANS
108	SAMHO JEWELRY	January	2011	21 SOUTH KOREANS
109	BEAGLE	January	2011	24 FILIPINOS
110	HOANG SON SUN	January	2011	24 VIETNAMESE
111	KHALED MUHADDINE	January	2011	22 SYRIAN, 3 EGYPTIAN
112	BELGIAN NOMINATION	January	2011	1 POLISH, 2 RUSSIANS, 2 UKRAINIANS, 7 FILIPINOS
113	SAVINA CAYLYN	January	2011	5 ITALIAN, 17 INDIAN
114	IRENE SL	February	2011	7 FILIPINOS, 1 GEORGIAN, 7 GREEK
115	SINDI	February	2011	13 IRANIAN, 10 INDIAN
116	QUEST	February	2011	4 USA
117	ING	February	2011	7 DANES
118	DOYER	February	2011	19 FILIPINOS, 3 ROMANIAN, 1 RUSSIAN
119	AL FARDOUS	February	2011	8 YEMEN
120	SINAR KUDUS	March	2011	20 INDOONESIAN
121	ZIRKU	March	2011	1 CROATIAN, 1 IRAQI, 1 FILIPINO, 1 INDIAN, 3 JORDANIANS, 3 EGYPTIANS, 2 UKRAINIANS, 17 PAKISTANIS
122	SUSAN K	April	2011	6 FILIPINOS, 4 UKRAINIANS
123	ABDI KHAN	April	2011	6 YEMENIS
124	GLORIA	April	2011	4 SEYCHELLOIS
125	ROSALIA D'AMATO	April	2011	15 FILIPINOS, 6 ITALIANS
126	GEMINI	April	2011	4 KOREANS, 13 INDOONESIANS, 3 MYANMAR, 5 CHINESE
127	JUBBA XX	July	2011	1 SHRI LANKA, 5 INDIAN, 3 BANGLADESH, 1 SUDANESE, 1 MYANMAR, 1 KENYAN, 4 SOMALI
130	TRIBAL KAT	September	2011	Missing Info
131	LIQUID VENTURE	October	2011	9 FILIPINOS, 1 GREEK
126	CHIN I WEN	November	2011	9 CHINESE, 8 FILIPINOS, 6 INDOONESIANS, 5 VIETNAMESE
127	ENRICO BEVOLI	December	2011	7 ITALIANS, 17 INDIANS

International Maritime Organization (2011), from January 2000 until December 2011

**Table 8** Breakdown of seajacked vessels crew nationalities (vessel seajacks off Somalia from 2007 till December 2011)

Index	Country	Incident levels (%)	Number of seamen
1	Philippines	26.14	615
2	India	9.77	230
3	China	6.59	155
4	Thailand	5.48	129
5	Ukraine	3.99	94
6	Syria	3.78	89
7	Russia	3.65	86
8	Turkey	3.61	85
9	Sri Lanka	3.36	79
10	Indonesia	2.89	68
11	Kenya	2.25	53
12	Romania	2.08	49
13	Vietnam	2.08	49
14	USA	1.95	46
15	Bulgaria	1.87	44
16	Egypt	1.87	44
17	Burma	1.74	41
18	Bangladesh	1.66	39
19	Georgia	1.66	39
20	South Korea	1.66	39
21	Pakistan	1.53	36
22	France	1.23	29
23	Greece	1.23	29
24	Yemen	1.23	29
25	Italia	1.19	28
26	Iran	0.93	22
27	Poland	0.93	22
28	Mozambique	0.59	14
29	Denmark	0.51	12
30	Nigeria	0.47	11
31	Tuvalu	0.47	11
32	Somalia	0.25	6
33	Germany	0.21	5
34	UK	0.21	5
35	Croatia	0.17	4
36	Taiwan	0.13	3
37	Ghana	0.08	2
38	Singapore	0.08	2
39	Cameroon	0.04	1
40	Estonia	0.04	1
41	Fiji	0.04	1

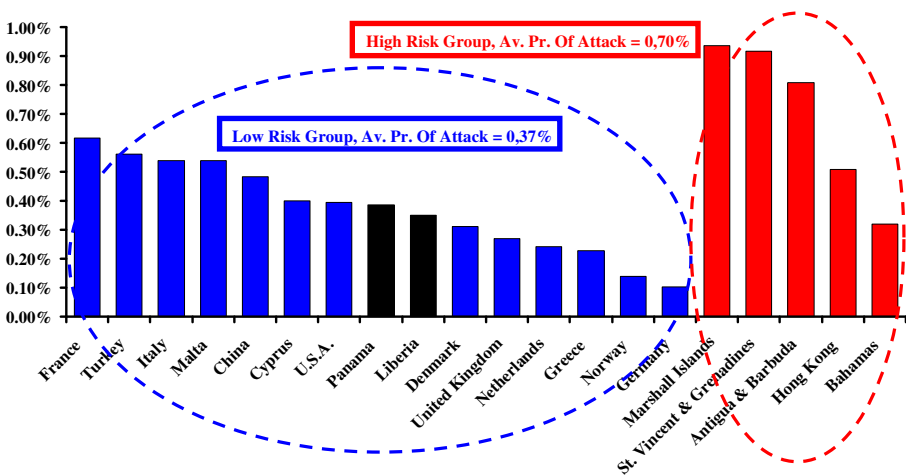


**Table 8** (continued)

Index	Country	Incident levels (%)	Number of seamen
42	Hong Kong	0.04	1
43	Ireland	0.04	1
44	Japan	0.04	1
45	Lithuania	0.04	1
46	Saudi Arabia	0.04	1
47	Serbia	0.04	1
48	Slovakia	0.04	1
	Total	100	2,353

Various Internet-based press reports

### Appendix 3: diagrams



**Fig. 3** Risk of attack based on the registry

### References

- Associated Press (2010) Arms race on high seas: armed pirate attacks soar. <http://www.ap.org/>. Accessed 5 March 2010
- BIMCO/ISF (2010) Manpower update: the world-wide demand for and supply of seafarers. The University of Warwick: Institute for Employment Research
- Central Intelligence Agency (2010) Somalia. [https://www.cia.gov/library/publications/the-world-factbook/maps/maptemplate\\_so.html](https://www.cia.gov/library/publications/the-world-factbook/maps/maptemplate_so.html). Accessed 24 Feb 2010
- Gekara VO (2008) Globalization, state strategies and shipping labour market Seafarers International Research Centre (SIRC). <http://www.sirc.cf.ac.uk>. Accessed 7 May 2010
- Hansen SJ (2008) <http://www.e-ir.info/?p=593>. Accessed 7 May 2010
- Hellenic Shipping News Worldwide (2010) Cheaper piracy patrols off Somalia needed, U.S. official says. [http://www.hellenicshippingnews.com/index.php?option=com\\_content&task=view&id=88119&Itemid=79](http://www.hellenicshippingnews.com/index.php?option=com_content&task=view&id=88119&Itemid=79). Accessed 17 Feb 2010

- Holton R (1998) *Globalization and the nation-state*. McMillan Press Ltd., London
- International Maritime Bureau (2011) Report on piracy and armed robbery against ships, p. 21
- International Maritime Bureau (2011) Best management practices to deter piracy in the Gulf of Aden and off the coast of Somalia, version 3, p. 3
- International Maritime Organization (2000) Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery Against Ships (resolution A.1025(26), Annex, paragraph 2.2)
- International Maritime Organization (2011) Monthly reports on acts of piracy and armed robbery against ships. From January 2000 until December 2011
- Lauder H, Brown P, Dillabough JA, Halsey AS (eds) (2006) *Education, globalization and social change*. Oxford University Press, Oxford
- Mejia MQ Jr, Cariou P, Wolff F-C (2009) Is maritime piracy random? *Appl Econ Lett* 16:891–895
- Menkhaus K (2009) <http://www.iiss.org/publications/survival/survival-2009/year-2009-issue-1/dangerous-waters/>. Accessed 7 May 2010
- Minter W, Volman D (2009) <http://towardfreedom.com/home/content/view/1620/1/>. Accessed 7 May 2010
- Møller B (2009) [http://www.diis.dk/graphics/Publications/Briefs2009/bmo\\_piracyofsomalia2.pdf](http://www.diis.dk/graphics/Publications/Briefs2009/bmo_piracyofsomalia2.pdf). Accessed 7 May 2010
- Norwegian Institute for Urban and Regional Research (2009) Piracy in the greater Gulf of Aden/myths, misconception and remedies. Oslo: Norwegian Institute for Urban and Regional Research Office of Naval Intelligence (18/02/2010). Mariner warning information
- One Earth Future Foundation (2011) The economic cost of Somali piracy. <http://www.saveourseafarers.com/assets/files/ECOP%20Full%20Report%202011.pdf>. Accessed 26 Feb 2012
- Sauvageot EP (2009) <http://www.ucm.es/info/unisci/revistas/UNISCI%20DP%2019%20-%20PARDO%20PIRATERIA.pdf>. Accessed 7 May 2010
- Statfor Global Intelligence (2011) Somali piracy, 2011 Annual Update. <http://www.stratfor.com/analysis/somali-piracy-2011-annual-update>. Accessed 17 Feb 2011
- Suez Canal Authority (2009) Annual reports (from 2000 until 2011)
- United Nations Conference on Trade and Development (2009). Review of maritime transport. From 2008 until 2011. <http://www.unctad.org/en/docs>. Accessed 15 Feb 2012
- United Nations Convention on the Law of the Sea (1982) Article 101
- Vagg J (1995) <http://bjc.oxfordjournals.org/cgi/content/short/35/1/63>. Accessed 7 May 2010
- Waldo MA (2009) [http://wardheernews.com/Articles\\_09/Jan/Waldo/08\\_The\\_two\\_piracies\\_in\\_Somalia.html](http://wardheernews.com/Articles_09/Jan/Waldo/08_The_two_piracies_in_Somalia.html). Accessed 7 May 2010
- Wu B (2004) Participation in the global labour market: experience and responses of Chinese seafarers. *Maritime Policy and Management* 31(1):69–82