
Maritime Piracy: Trends and Future Developments **A Review**

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Abstract:

Maritime piracy has evolved into a modern and organized form of highly profitable criminal "business" activity with increasing direct and collateral costs, over the past years. Although piracy is a worldwide phenomenon (West Africa, Indonesia and the Philippines), Somalia is by far the world leader. As of 29 July 2012, Somali pirates are still holding at least 11 vessels and 174 crew members. In 2011, pirates earned \$146m (£93m), an average of \$4.87m (£3m) per ship, from ransom paid by shipping firms. An estimated 3,000 to 5,000 pirates operate and although 1,000 have been captured and about 25 military vessels - from the EU and NATO countries, the US, China, Russia, India and Japan - patrol approximately 8.3m sq km of ocean ranging from as far south as Madagascar covering the coast of Somalia extending to Oman and the Gulf of Aden, the phenomenon is a serious threat to maritime transport affecting both shipping companies as well as the crews manning this industry.

The paper analyzes available statistics highlighting the type of vessels and the flags that seem to be more vulnerable to high jacking and kidnapping and discusses the effectiveness of measures introduced [exclusion zones, USN-NAVEUR and EUNAVFOR activity, the use of Private Maritime Security Companies (PMSC), etc.] over the past 7 years. Furthermore, the paper attempts to link issues relating to the socioeconomic and political situation in the countries offering pirates a base to operate, reaching the conclusion that piracy cannot be eliminated solely with force oriented initiatives without addressing its root causes which are political instability, endemic poverty and the lack of social and economic safety and security. Finally, the paper stresses the humanitarian aspects relevant to the seafarers trading around the world and especially in the Indian Ocean, who often face violence and kidnap, brutal treatment, abuse, torture and lately, most regrettably, several fatalities.

Key Words:

Maritime piracy, economic cost, awareness, security, safety, Somalia

JEL Classification: K32, K33, L91, R41

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1. Maritime Piracy as a serious international crime: definition and basic legal aspects

In legal terms, maritime piracy is dealt with on two levels. The first concerns domestic law and in particular national coastal state criminal law as applied to the marine area of national sovereignty, namely internal waters and territorial sea. The second level entails international law applicable to the sea beyond national sovereignty, namely international waters for navigation (exclusive economic zone-EEZ and high seas).

It is obvious that the main interests and concern of the international community as far as maritime piracy is concerned, are located in international waters (EEZ and high seas), especially as this area, amongst others, is mainly used by international shipping. For these ocean areas, a uniform international legal framework for prevention, enforcement and prosecution of perpetrators involved in incidents of piracy, has been adopted. Article 101 (definition of piracy) of the United Nations Convention on the Law of the Sea (UNCLOS 1982) is by far the most accepted definition of maritime piracy, and reads as follows:

“Piracy consists of any of the following acts (Vlachos, 2011):

- (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
- (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;”

The above mentioned definition is located in Part VII of UNCLOS, which contains the international regulatory regime for the high seas. In the same section a series of regulations for the prevention and suppression of piracy are also included (Articles 101-107). The same regime applies to the high seas and EEZ, in accordance with Article 58 (paragraph 2), of UNCLOS (rights and duties of other states in the exclusive economic zone), in so far as they are not incompatible with this part of the Convention.

Over the past decade maritime piracy has evolved into a modern and organized form of highly profitable criminal business with increasing direct and collateral costs (Tsamopoulos, 2010).

The most notorious areas where pirate attacks are conducted are ocean waters surrounding Somalia and the Gulf of Aden as shown in Figure 1, where at present

eight vessels and 235 hostages are being held and an estimated 3,000 to 5,000 pirates operate; of which 1,000 have been captured and are going through legal processes in 21 countries (European Union Naval Force Somalia).

The universal condemnation and demerits of the act of piracy is based on UNCLOS and its relevant regulations on the one hand and on the other, on relevant instruments of international law and legal theory. Maritime piracy in particular is characterized as a crime against the law of nations (*jure gentium*), and pirates as enemies of the human race (*hostes humani generis*). Based on the above, piracy in international waters is considered an international crime, which is persecuted and suppressed by any (regardless of flag) warship or ship being on government service and authorized to that effect (universal jurisdiction to prosecute crimes against humanity, Article 107 of the UNCLOS) (Siousiouras and Dalaklis, 2011).

Besides the terms and scope of UNCLOS, the seizure of Achille Lauro in 1988 by members of the Palestine Liberation Organization (PLO), led the UN and the International Maritime Organization (IMO) to adopt the Convention for the Suppression at Unlawful Acts against the Safety at Maritime Navigation (SUA Convention, 1988). The text was signed in Rome on the 10th of March 1988 and entered into force on March 1st 1992. The overall objective is to ensure a comprehensive suppression of unlawful acts committed against the safety of maritime navigation which endanger innocent human lives, jeopardize the safety of persons and property, seriously affect the operation of maritime services and thus are of grave concern to the international community.

The issue of responding to piracy through the institutional framework, has entered a new phase during the last two decades, especially as a response to catalytic events of 9/11 2001 and the terrorist attack on the twin towers in New York, USA, as well as the current transformation and rise of piracy mainly in the region of Somalia. Within this context, a holistic approach to the issue of maritime security is being promoted, as part of a worldwide endeavor aiming at increased maritime safety. In this more general approach, not only the ship but also the coastal states, ports, shipping companies, flag states of vessels and related international organizations are actively involved.

The International Ship and Port Facility Security Code (ISPS Code, 2002), with a mandatory effect as of the 1st of July 2004, being Part XI - 2 of the International Convention for the Safety of Life at Sea (SOLAS 1974), is an example of the above mentioned attempt.

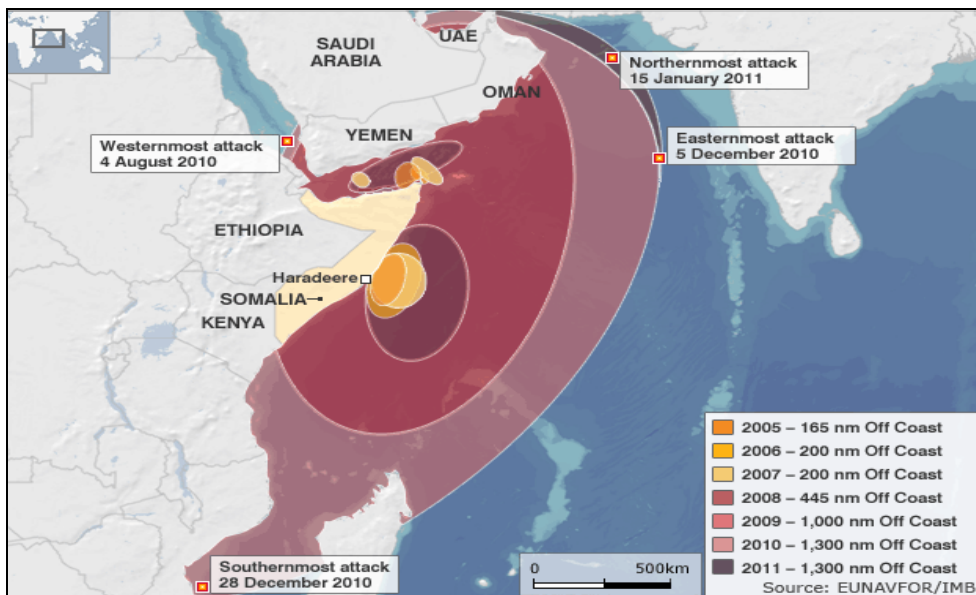
The SUA Convention has also undergone an extensive revision (2005), in accordance with the work and recommendations of the Legal Committee of the IMO, aiming at modernizing and adapting the Convention to face modern challenges

and conditions. Finally, with the encouragement of UN and IMO, regional initiatives have also developed, which also receive an institutional basis. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia, and the Djibouti Code on Conduct which concerns the adoption and implementation of directives of IMO (2009) to combat piracy in the region, are such initiatives.

These government initiatives and activities are also supported by non-governmental entities involved in shipping, such as the International Maritime Bureau (IMB) and the Baltic International Maritime Conference (BIMCO).

A critical appraisal of the recent institutional developments and their effectiveness would be premature and no meaningful conclusions could be drawn. Indicatively, one should mention the concerns of the maritime community regarding regulations of the ISPS Code incurring increased costs (running, labor, etc.) to maritime business, without obvious benefits and effectiveness.

Figure 1: Pirate operations in Somalia and the Gulf of Aden, indicating the expansion of pirate operations over recent years



Source: <http://www.bbc.co.uk/news/world-europe-12412565>

2. Areas of intense pirate activity

The action areas of modern pirates have changed considerably from earlier ages. Pirates often originate from countries suffering from economic deprivation and

social discontent in developing and especially in the Least Developed Countries. Maritime piracy incidents are linked to corruption in small and weak states, separatist movements in low-intensity conflicts, areas where the proliferation of weapons is practiced and seas where problems of jurisdiction preclude strict surveillance.

2.1 *Indonesia and the Philippines*

In Indonesia and the Philippines, maritime piracy is favored due to the fact that their waters are part of strategic sea trade routes, connecting east to west. The geographical characteristics of the region, play a vital role in maritime piracy, since the Indonesian and Philippine archipelago have 17,500 and 7,000 islands respectively, obliging the ships to cross at extremely low speeds, thus giving modern pirates the opportunity to organize their attacks and escapes in very well protected and hidden areas. Over the years the size of pirated ships has increased as have the ransom amounts requested, indicating an escalation in pirate activity employing new technologies and effective fire power. It is essential to note that the situation is worsening due to the political instability in Indonesia, which implies less law enforcement and control of piracy.

2.2 *West Coasts of Africa*

On the West Coast of Africa and especially around Nigeria many incidents of maritime piracy occur. The majority of attacks are carried out on ships at anchor or expecting for dock. In recent years attacks have been restricted due to the combined efforts of the Nigerian authorities and patrolling foreign navies.

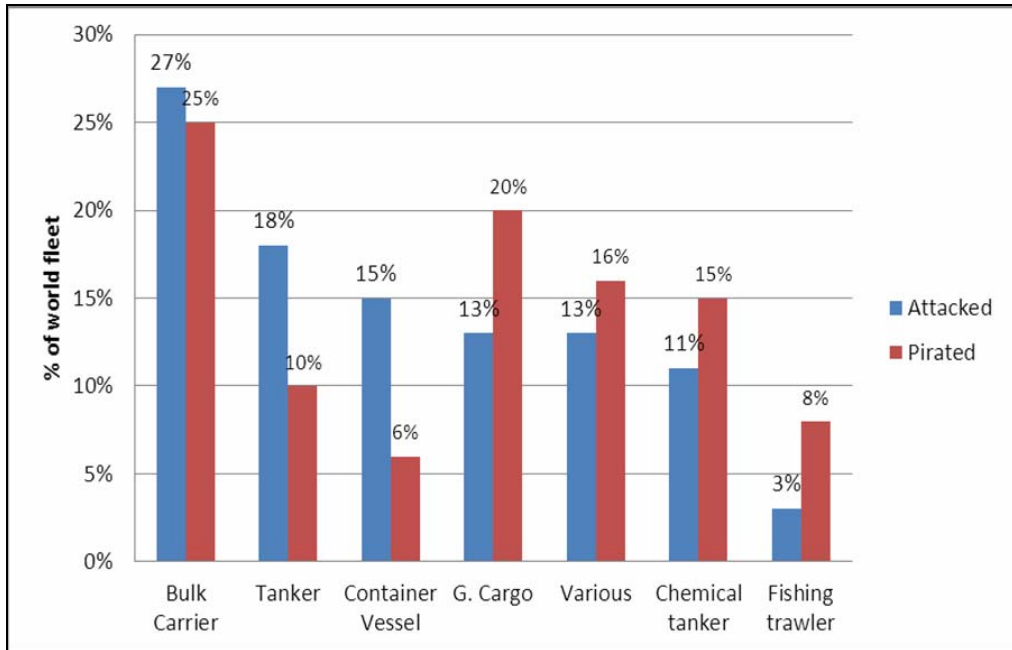
2.3 *Southwest America*

Piracy incidents involve ships at dock or at anchor and are mainly reported from ports in Colombia, Venezuela, Guyana and the Caribbean (Georgantopoulos and Vlachos, 2003).

3. *Statistical Profile of the Types of Commercial Vessels, both Attacked and Pirated off Somalia*

Based on an analysis by the International Maritime Bureau (IMB) the commercial vessel type most frequently attacked off Somalia is the Bulk Carrier (27%), followed by the Tanker (18%), the Container Vessel (15%), the General Cargo Vessel (13%), the Chemical Tanker (11%) and the Fishing Trawler (3%) (Figure 2). Existing experience teaches that fishing vessels are mostly targeted because following their capture by pirates, they are being used as "Mother Ships" (a term indicating a pirate ship of geographically "extended" operational capability).

Figure 2: Vessel types attacked and pirated over a 2.5 year period



Source: International Maritime Organization, IMO. Monthly Reports on acts of piracy and armed robbery against ships (January 2007 till June 2010), <http://www.imo.org> [accessed 15 December 2010]

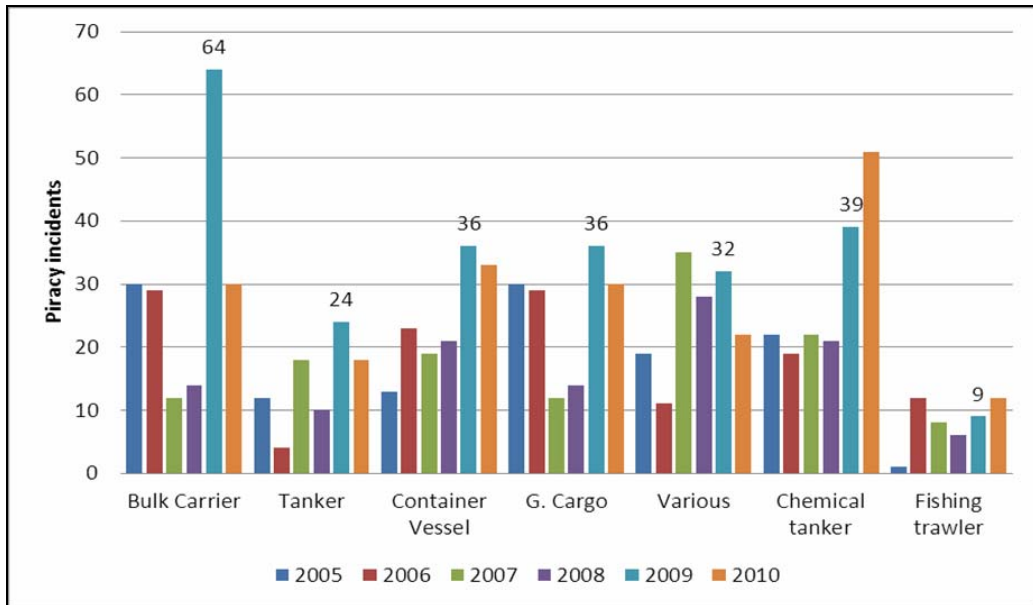
Concerning the vessel type most frequently pirated Figure 3 indicates that the Bulk Carrier (25%) is higher, followed this time by the General Cargo Vessel (20%), the Chemical Tanker (15%), the Tanker (10%), the Fishing Trawler (8%) and the Container Vessel (6%).

In Figure 3, the vessel type attacked over a 5 year period 2005 – 2010, for the months of January to June, during which it is well known that pirates are more active due to the lack of monsoons, indicating that bulk carriers and to a lesser extent general cargo vessels are more prone to attack compared to other vessel types. The figure also shows that 2009 was a very bad year for the maritime industry which suffered 406 vessel attacks in that year.

A plausible explanation as to why general cargo vessels and to a certain extent bulk carriers, are more liable to attack probably lies in the fact that the average age per dwt of this vessel type is around 22 years, more than double the average age per dwt of container vessels (9.0 years) and tankers, (10.7 years) (The Foreign Affairs Committee). This finding is also in line with an observation published in "Age profiles of Attacked and Pirated vessels off East Africa" (Coutroubis and Kiourktsoglou, 2010), in which research indicated that "almost one out of every five

(18.5%) vessels attacked is more than 25 years old, but more than one out of every three (>33%) vessels pirated belongs to the same range of age, suggesting that the crime perpetrators are more effective when they attack older vessels" (Kiourktsoglou and Coutroubis, 2012).

Figure 3: Piracy incidents according to vessel type for the years 2005 – 2010

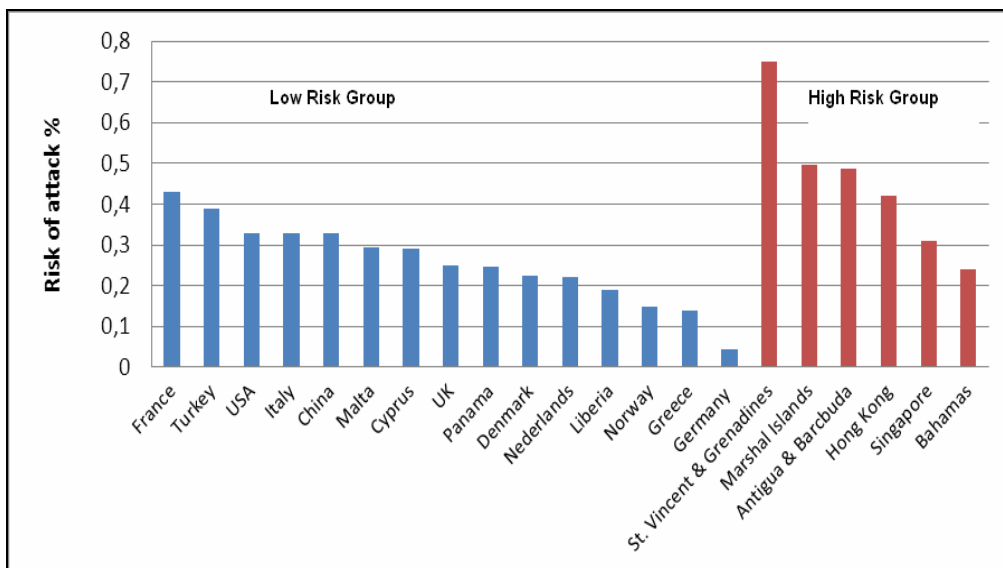


Source: Coutroubis and Kiourktsoglou, 2011

3.1. Relationship between the flag of a commercial vessel and the risk of attack by Somali pirates

Figure 4 shows the relationship between the risk of attack by Somali pirates, facing a commercial ship and the flag it flies. It has been observed that pirates are particularly cautious when attacking a vessel from certain countries. These observations were treated statistically (Coutroubis and Kiourktsoglou, 2011) the results yielding two (2) groups with differing risk probabilities. A High Risk group with a risk probability of over 0,45% and a Low Risk group with a probability of around 0,26%. The obvious reason for this differentiation is the naval presence from states representing the flags flown by the commercial vessels. The pirates fear an immediate response to a distress signal from a commercial vessel belonging to nationals of countries that have a naval presence in the area. Furthermore, pirates avoid challenging ships from countries with significant economic, military and technological power, fearing retaliations affecting other aspects that may prove negative for the design and realization of pirate attacks.

Figure 4: The risk of attack by Somali pirates facing a commercial vessel as a function of its flag



Source: Coutroubis and Kiourtsoglou, 2011

4. Somalia: In focus

4.1. Dimensions of maritime piracy

In the bibliography three kinds of maritime incidents are recorded : incidents in which a vessel is approached but not attacked or boarded (named Approached), incidents in which the vessel is attacked but the pirates fail to board the ship (called Attacked) and incidents where the vessel is boarded and takeover by the pirates (called Pirated). The latter incidence can lead to theft etc., with the pirates leaving the vessel or to the hijack of the vessel and ransom being paid for the release of the crew, cargo and vessel.

In Table I data presented indicate the increase in piracy attacks over recent years. Noticeably, a significant reduction in the year 2012 is observed and much discussion has recently arisen as to whether this development marks a viable and long term solution to the problem of piracy attacks in the Somali and Gulf of Aden region. Data on monthly pirate attacks during 2012 are presented in Table II, in order to further understand this abatement in piracy attacks in the area.

Table I: Pirate attacks in Somalia and the Gulf of Aden (2008 – 2012)

2008	2009	2010	2011	2012
89	190	163	227	104

Source: NATO Shipping Centre

Table II. Monthly pirate attack incidents during 2012

2012	Approached	Attacked	Pirated
January	5	4	1
February	6	1	1
March	0	8	2
April	3	2	2
May	0	2	1
June	0	3	1
July	0	0	0
August	0	0	2
September	0	1	0

Source: Donald, D. (2012), *Aegis Advisory, 3rd Annual Safety4Sea Forum* (<http://www.aegisworld.com/>)

It is clear that during the months of July to September the monsoons hinder the pirates from preparing and realizing pirate attacks in the Indian Ocean off the Somali coast. As stated previously, analysts are debating whether the continuous patrolling of naval forces⁶ are weakening their capabilities, or the existence of private contract armed guards (security personnel) aboard ship, are averting such criminal activities, especially when recent data indicate that although 151 attacks occurred in 2011, compared to 127 in 2010, only 25 lead to successful hijacks compared to 47 in 2010. For 2012 the most up to date figures (Donald, D., 2012) indicate that out of 25 attacks only five lead to successful hijackings.

4.2. Ransoms and time held for vessels

Ransoms over the time period from 2007 to 2011 are shown in Figure 5. For 2012 ransoms remain high with an average payout of \$4,3m, compared to nearly \$5m in 2011, with negotiations starting from very high demands (\$ 75 million, have been quoted (Donald, D., 2012). Concerning the time over which vessels are held and the crew being captive, it is understandable (Table III) that high demands from the

⁶ About 25 military vessels - from the EU and NATO countries, the US, China, Russia, India and Japan - patrol approximately 8.3m sq km (3.2m sq miles) of ocean, an area about the size of Western Europe.

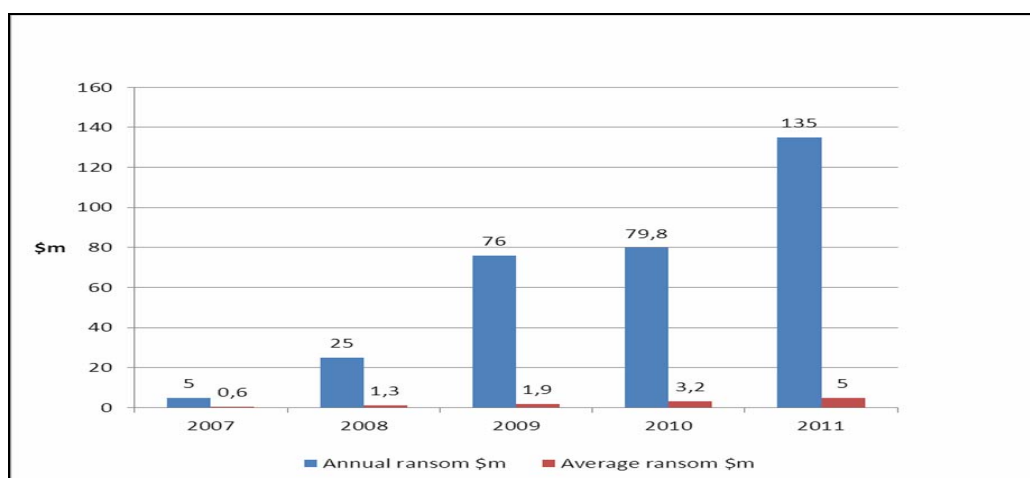
pirates make negotiations long and tiresome, leading to extended time periods of capture (Donald, D., 2012).

Table III. Average time over which vessels are held

	2010	2011	2012
Average time held (days)	86	142	211

Source: Donald, D., 2012

Figure 5: Ransoms paid out to Somali pirates over the period 2007 – 2011



Source: 2007-July 2011 figures from the FCO, see Ev 70; December 2011 figures from NATO at Northwood

It is interesting to present findings (Ktenas, 2011) indicating the distribution of ransom money, since it is obvious that pirates cannot maintain such a successful and lucrative business without sharing part of the ransom money. The sharing of ransom money is calculated as follows:

- Pirates operating the business get 30%;
- Armed partners that secure bases at shore, 10%;
- Local community, elders and officers, 10%;
- Sponsors and donators of equipment and vessels, 30%;
- Individuals giving international coverage to pirates, 20%.

Data from an ECONSTOR report (Shortland, 2011) suggest nominal daily wages in the pirate controlled provinces of Nugal and Muduq have caught up with and overtaken non-pirate regions since the explosion of piracy in 2008. In particular in Nugal province, the daily wage increased from 40,000 Somali shillings in 2005 to

120,000 in 2011 (\$1 = 25,000 Somali shillings), indicating that ransom money is to a certain extent distributed locally in pirate controlled Somali provinces.

5. The economic cost of piracy

5.1. Direct costs

Several costs are necessary to be estimated in order to approximate the direct economic effect of piracy on a global scale. Table IV presents estimates of costs by Anna Bowden (2010) in a recent study entitled “The Direct Economic Costs of Piracy”.

Table IV: Total costs incurred from maritime piracy (2010)

Cost	Factor Value (Dollars)
Ransoms: excess costs	\$176 million
Insurance Premiums	\$460 million to \$3.2 billion
Re-Routing Ships	\$2.4 to \$3 billion
Security Equipment	\$363 million to \$2.5 billion
Naval Forces	\$2 billion
Prosecutions	\$31 million
Piracy Deterrent Organizations	\$19.5 million
Cost to Regional Economies	\$1.25 billion
TOTAL ESTIMATED COST	\$7 to \$12 billion per year

Source: Bowden, 2010.

In the case of ransoms, as described earlier, a spectacular increase in the ransom demands from pirates has occurred in recent years. The excess costs due to ransom demands (negotiations, delivery fees, crew and ship out of commission etc.) are estimated to be around \$830 million for both 2009 and 2010.⁷

As far as the cost of insurance is concerned, estimates are under the assumption that not all ships purchase insurance premiums, thus setting a lower bound estimate based on the fact that 10% of ships purchase an insurance premium, totaling \$459 million and a higher bound estimate, if 70% of ships purchase insurance premiums i.e. \$3.213 billion⁸.

⁷ Note that in the cost of piracy model, the excess cost of ransoms is calculated into the total global cost of piracy, since the actual ransom value paid to pirates is generally covered by insurance, and is therefore already accounted for in the costs of insurance premiums below.

⁸ These proportions are an educated guess, ascertained through discussions with representatives from the shipping industry, and other external studies. The OEF Cost of Piracy Model also allows the user to

Concerning the cost of re-routing ships, the One Earth Future Foundation (OEF) cost of piracy model, utilizing data from the U.S Department of Transport Maritime Administration (MARAD) and the Baltic and International Marine Council (BIMCO), predicts the following costs:

- For a 10,000 TEU: total cost of \$2.95 billion;
- For a 300,000 DWT VLCC Crude Carrier: total cost of \$2.34 billion.

The cost of deterrent and security equipment refers to the costs incurred by ship owners who decide to protect their property and crew from pirate attacks by preparing their ships with security equipment and/or personnel prior to transiting a high-risk zone. In this case, the lower bound estimate per year is calculated to be about \$363 million and the upper bound estimate at around \$2.5 billion (Bowden, 2010).

5.2. *Secondary (macroeconomic) costs*

To date, calculations of the cost of piracy have generally focused on the first order (direct costs) to the shipping industry or governments (The Economic Cost of Piracy Full Report). The OEF cost of piracy model also accounts for secondary (macroeconomic) costs to regional countries surrounding the Somali piracy zones.

These can be summarized as follows:

- *Costs to Regional Trade:* Piracy affects the cost of trade not merely because particular ships are intercepted when delivering goods. A number of nations have indicated that their fishing sector has declined in response to the threat of piracy.
- *Cost to Food Price Inflation:* Approximately 40% of piracy attacks have been on bulk carriers and general cargo vessels (Meija, M.Q., *et al.*, 2009). Pirate attacks on these vessels have direct consequences on the price of food, as deliveries of food cargo are delayed, or in the case of perishable goods, lost, as these vessels carry the majority of the world's food supplies such as rice and grain.
- *Cost of Reduced Foreign Revenue:* Given the instability and volatility of regions affected by piracy, foreign investors often avoid these areas a look for alternative regions to invest and spend money.

In Table V some macroeconomic costs (as described above) are calculated for selected countries bordering the piracy zone

set these proportionalities at any percentage they choose, therefore feeding into the end results of the total cost of piracy.

Table V. Macroeconomic costs to selected countries

Country	Indicated Loss Per Year
Egypt	\$642 million
Kenya	\$414 million
Yemen	\$150 million
Nigeria	\$42 million
Seychelles	\$6 million
Total Macro Costs	\$1.25 billion

Source: Bowden, 2010

6. Anti - piracy measures

6.1. *Direct, flexible and effective interventions at the institutional level, domestic and international*

The coastal states in particular as well as the international community as a whole, are obliged to modernize and adapt both domestic and international law to evolving needs ensuring effective prevention and suppression of piracy. As noted previously, the prevailing approach worldwide is for a holistic and multilateral risk management in shipping. Within this framework, it is believed that the special case of policing and preventing piracy must be harmonized with the prevailing understanding that requires coordinated and active involvement of all stakeholders (ship, flag State, coastal States, ports, shipping companies, etc.). Such initiatives include the regional cooperation of states at the local level and the involvement of governmental (UN, IMO, EU, NATO etc.) and non-governmental organizations (NGO's) (IMB, BIMCO).

6.2. *Social awareness*

Many studies have shown that the key to combat piracy is substantial and in-depth information dissemination on the subject to mass media, the general public, business leaders/ industrialists and politicians. Especially, politicians have the ability to initiate and maintain actions that have proven successful in curbing piracy.

Campaigns have been designed to combat piracy through social media (Facebook, twitter), the creation of a strong brand identity that will relate exclusively to piracy (e.g. SaveOurSeafarers/S.O.S.). Indicative is the campaign launched by SaveOurSeafarers/S.O.S of informing citizens on the hardships faced by seafarers when under attack at sea or in captivity (Szymanski, 2012).

6.3. *The use of armed guards*

Many shipping companies have resorted to using private armed guards, as a last option, as it is obvious that the use of fire arms usually escalates the confrontation between the crew and the pirates. In the meantime, governments are ambivalent about the use of armed guards, as this may increase the spread of firearms, which may find their way to terrorist groups.

Private Maritime Security Companies (PMSC) have been set up in many countries offering not only armed protection, but advice on many related aspects, such as standards logistics, communications, intelligence, etc. (Moraitis, 2012).

6.4. *Naval forces*

Both the US Navy (MARLV) and a European naval force (EU NAVFOR) are active in the areas affected by piracy, working closely with the merchant navies and the countries involved (flag states), promoting information sharing, safety and interoperability in the maritime environment. It is interesting to note that Greek naval vessels participate in EU NAVFOR and Greek naval officer was the commander of the naval strength for the first quarter of 2009 (Musaad Allaban, 2012).

7. Conclusions

It is clear that piracy attacks constitute an imminent danger to the lives and welfare of mariners as well as cargoes and ships. Piracy in addition, has a direct economic impact in terms of fraud, theft of cargo and travel delays, and definitely undermines the interests of countries active in seaborne trade.

From a political perspective, piracy plays an important role in undermining the legal system and creating a fertile ground for corruption amongst government officials thus weakening national institutions striving to strengthen sovereign states. This paper attempts to link issues relating to the socioeconomic and political situation in the countries offering pirates a base to operate, reaching the conclusion that piracy cannot be eliminated solely with force oriented initiatives, without addressing its root causes which are political instability, endemic poverty and the lack of security.

It was once thought that a solution to the piracy problem should aim to exploit local disappointment among coastal communities regarding the economic benefits from piracy, thus offering local inhabitants far greater benefits than what piracy in general could offer (www.bbc.co.uk/news/world-africa-16534293). It seems that with the latest figures indicating that nominal daily wages in the pirate controlled provinces of Nugal and Muduq have caught up with and then overtaken non-pirate regions, much more has to be offered and established at the local level to have any chance of success in weakening pirate control of these areas.

As stated previously, based on the latest data indicating a significant reduction of piracy incidents for 2012, in the seas neighboring Somalia and the Gulf of Aden, analysts are debating whether the continuous patrolling of naval forces as well as the private contract armed guards aboard ships, have been successful in weakening pirate capabilities. All wait the months of February to April 2013 during which every year pirate activity increases after the monsoons. Many fear that Somali pirates will develop new alternative ways to reach out to targets, in order to maximize their gains. All await the results from the implementation of recent legal instruments addressing the so-called "investors", located all over the world (Polemis, 2012) that finances piracy.

On the local level there is hope that the pirates now have less freedom of movement along the Somalia coast, as the conditions in Somalia have changed with a new government which has succeeded in freeing areas such as Kismayo from Al-Shabab and pirate influence.

As is apparent from the available statistics, the last two years show a decreasing trend in the incidents of piracy, particularly in the area of Somalia. An obvious explanation of this phenomenon is that the adoption and implementation of measures and policing policies, surveillance and protection of ships and marine areas due to the increase in piracy incidents, has paid-off. However, it is premature to draw definitive conclusions and to make a serious assessment of the effectiveness of anti - piracy measures and policies. Perhaps the greatest risk negating the above important positive developments is the spatial shift of the above activities into new areas more suitable for piracy attacks. Analyst, however stress that the risk of exacerbation of the phenomenon, especially in hazardous areas (Indonesia and the Philippines, West Coast African American Southwest), is always present.

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