

Various Risks Affecting International Shipping And Cargo

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ABSTRACT

This paper deals with the various risks involved in the International shipping and cargo and measures taken to mitigate the risk taken by insurance companies. It also defines the perils of the sea, there were many articles and journals written on these aspects before, but this paper is compilation of all the risk factors involved, marine insurance policies available, and methods to mitigate risk. This case study helps us to understand in a broader perspective of all the factors involved in International shipping and cargo.

International shipping and cargo is a very vast subject it involves many different aspects to look into, this case study helps us to understand all the different aspects involved in International shipping and cargo under one roof and helps us to gauge the possible risks involved and various possible measures to be taken to mitigate risks and an overall view of International shipping. It discusses on different perils of the sea and the marine insurance coverage.

This particular context has been chosen because the research done in this area previously has been very limited and scattered, it's a vast area to look into and proper alignment is needed for better understanding of the process and different resources and risks we go through in International shipping and cargo. This paper helps us to have a whole picture of the subject and understand the various perils of the sea, marine insurance, what are the measures taken by different company to protect their goods, and how to mitigate the risk.

The paper covers the different areas of International shipping and cargo and it takes us through all the marine insurance of different companies in this field and their real time data and the process of International shipping and cargo. It helps us understand different perils of the sea and the role of government in this process. It is very crucial for people dealing in this industry or anybody wants to understand the process of International Shipping and cargo, or students of International business or the businessmen who are into International trade and want a brief understanding on this subject. International Shipping and Cargo – How to mitigate the risk.

Keywords: *International Shipping, Perils of the sea, Marine insurance, Jettison, Cargo Transport, Sea Piracy Design/Methodology/Approach – The review of past research is used to develop Conceptual framework.*

INTRODUCTION

Shipping companies are concerned for the safety of their ships. Any in compliance with any norms, resulting in loss of lives, damage to the environment and cargo have strict penalty. Centralized procedures that quantifies risk has been lagged behind exposing shipment to various uncertainties. Along the way, from refrigerated freighters, and container ships to car carriers and supertankers, the world's shipping industry has played a vital role in transporting world's food, products and resources, while helping to transfer the global economy. Due to globalization, trade and financials growth of the nation has tremendously increased. According to the Hellenic Shipping News, International trade has been increased from \$4 trillion in 1990 to \$24 trillion in 2014 based on data from the United Nations Conference on Trade and Development, 2015.

The shipping industry faces many risks while exporting the goods abroad. The risk which are influenced by various factors such as increase complex markets, disparity in regulatory framework, change in technology and political changes. A shipping company has to knowingly accept these risk or transfer them onto an insurance company.

The most common cause of global shipping losses is due to the sinking of vessels, which not only resulted in loss of lives and goods, but also destroyed the marine life and has polluted the external environment, with bad weather often a factor. On 13th Nov 2002, the single hulled oiled tanker, named Prestige sank 30 miles

off the glacial coast in North Western Spain. The tank was carrying 77000 tonnes of heavy oil, of which a probable 67000 tonnes were spilt into the sea. Ships registry disclaimed that Prestige collapsed due to the storm, bursting 12 tanks. The tank was deteriorating in its internal structure and it split in 2 parts, spilling large quantity of oil even before sinking. The impact of such a disaster was that it polluted the Spanish coastline for an approximate range of 10000km. Another adverse situation was that it left the fishing industry devastated. Thus, it took 10years to recover from such a disaster. (<http://archipelago.gr/en/our-work/marine-conservation/shipping-risks/>)

Architectural failure of ships is another major cause of failure, often leading to total loss of ship and passenger. The major reason for such architectural failure is the errors made by humans in all phases, such as designing, construction and operations. The Deep Water Horizon Oil Rig exploded on April 20th, 2010 due to the failure in cementing process which caused high gas emission, resulting in an explosion and the destruction of the rig. 11 people out of 126 on board lost their lives. The blast impacted a total area of 68000 square feet. It took nearly \$11.4 billion dollar for the clean-up process and has destroyed the marine life in an adverse manner.

The essence of this study is to understand the Shipping and Cargo Industry and identify various risk that limits the transportation of goods.

LITERATURE REVIEW

Logistics is flow of goods from origination of raw materials to end user, Customer demands shorter lead times, better quality and cost effective this leads to increase in the competition in business as management of logistics plays important role as companies continue to globalize.(Alfred J. Battaglia, Becton Dickinson 2000)

Transportation determines the efficiency and manipulation in flow of goods and to link producing procedures .The components in logistic system are Logistic services, Information Systems and Infrastructure/Resources (T seng, Yung-yu, Wen Long Yue, and Michael AP Taylor,2005).

The International transport rates have declined post-war trade growth, some detailed research evidence show that the ocean freight have increased when compared with air freight as they declined rapidly, reasons include Tramp shipping, voyage charter, containerization for general cargo, and growth of open registry system are few of reasons for decline in ocean freight(Hummels, David 1999)

Risk Assessment: One of the main concerns for ship designers, ship builders, and ship owners is the safety of ships at sea. The damage to lives, damage to the environment and cargo. Some major concerns for different types of accidents are water intake, collision, structural failure, fire explosion, and human errors in building the ships. The poor management standards and increasing human error has resulted in the introduction of International Safety Management (ISM). This management recognises risk, and gives proper control for dealing with the risk. International Maritime Transportation (IMT) is an approach for assessing the risk and managing them. This management has coined as Fomal Safety Approach (FSA) that quantify risk and analysis of risk and taking appropriated decisions. Lloyd operates one of the oldest data banks. Lloyd considers the following categories of accidents: Foundered, Fire and Explosion, Collision, Wrecked or stranded, Hull or machine damages..(Carlos Guedes Soares&A.P.Teixeira, 2001)

Overweighting: Overweighting of containers is a serious threat faced by many shipping companies. The most common containers overweight situation when the actual container weight exceeds the shippers declared weight. Some of the causes or adverse affects of overweight and mis-declared weights are ship damage, loss of goods, improper storage, collapsing of containers etc which are caused by shippers who try to maximize the space for containers. This problem can be solved by amending SOLAS convention who verifies the weighing of containers prior boarding and education of shippers, enforcement through weights, modified tariffs or specialized equipments.(Andrei Cristian, 2011)

Environmental Hazards:-Failure to manage the environmental impacts of their operations raises serious potential risks for firms involved in intermodal logistics and multimodal transportation). Threats posed by

national and international governments are considered as a potential risk in intermodal logistics and multimodal transportation. Secondly, even financial risk acts as a risk in shipping of goods. Firms that ignore the negative impact of the environment not only incur opportunity cost but also have to pay heavy cost for pollution control technologies and there is a loss of competitive pricing advantage. Public expects companies to behave in an ethical manner and recognises its social responsibility towards environment and stakeholders. This can be done through compliance of international standards of the European committee standard Eco-Management and audit scheme and payment of custom tax and compliance with its amendments. (Rondinelli, Dennis, and Michael Berry, 2000)

Political Risk: Government interference with international business operations. Political risks arise from the actions of national governments which interfere with or prevent business transaction or change the term of agreement. Political risk is different from political instability. Due to political risk, movement of goods between various nations becomes difficult and sometimes government may impose ban on import and export of certain goods in the country. The way of overcoming such political risk is integrating and adapting such government regulations and the most important is strategic decision making in formulating policies and plans. (Stephen.J.Kobrin, 1979)

Integrated Risks: Risk is different from Uncertainties. Financial Risk Management reduces corporate exposure into particular risks without changing a particular strategy. The principle of financial risks – reduction techniques are purchasing insurance and selling of financial instruments. The ability to lock in a fixed price is the key risk –reducing features of future or forwarded contracts for both buyers and sellers. Another type of integrated risk is Corporate Risks that can be avoided by strategic risk management. A firm may avoid certain risk through niche strategy of participating only in low uncertainty markets. (Kent.D.Miller, 1992)

Terrorism: The terrorist attack on the US focuses its impact not only on US, but also has worldwide implications. Disruptions to the flow of materials into assembly plant. Ford and Toyota manufactures were vulnerable to transportation disruptions as they had to operate in Just in time (JIT) inventory. Government response was the main reason behind disruption. Challenges faced by firms are preparing for another attack, managing supply chain under increased uncertainty, managing relationship with the government and organising to meet the challenge. Chief Security Officers (CSO) of the firm is in charge of various security schemes that will be coordinated and tested. Continuous of operations of the firms even after an attack. Other measures such as cooperating with the government, adding securities and creating redundancies. (Yossi Sheffi, 2001)

Insurance related actions: Risks can be spread and losses can be shared by potential insurance and alternative risk – transfer instruments. The focus is on developing countries, whereby a drawback is that it cannot be availed to poor countries affecting severely from disaster and poor financial strength. Another risk transfer instruments called as Catastrophe and Cat Bond which has replaced traditional reinsurance. However few citizens or government of poor countries hold insurance policies or take advantage of other instruments to transfer the risk. (Linnertooth, Bayer, Joanne, 2003)

SHIPPING AND CARGO INDUSTRY

Around 90% of the world trade is carried by international shipping industry. Without the import and export of goods it is impossible to satisfy the demand of the world. Transportation of goods through sea mode continues to expand, bringing benefit to the customers worldwide. There are over 50000 merchant's ships trading internationally, helping to transport every cargo possible. The world fleet is registered in nearly 150 countries.

The history of the trade can be divided into three phases: The trade started in the Mediterranean that spread to Greece, Rome and Venice, Amsterdam and London. During the first phase a globe trade network developed between the three greatest hubs in India, China and Europe. Initially, the goods were transported through land and was slow and expensive, but later when the ship routes were discovered in the late 15th century, cost of transportation dropped drastically and improved the trade volume capacity.

In the second phase, industrial revolution in the late 18th century opened doors for innovation. Improvisation in shipsdesigning, ship building and global communication made it possible for shipping to be conducted as a global industry. Trade grew rapidly in the colonial regions of Europe for the next century and the framework of sea rapidly changed.

In the final phase, manufacturers were able to track down better sources of raw material and invested heavily in integrated transportation system which would reduce the cost of transporting of these goods. During this phase the bulk carrier market, containerization of general cargo and specialist shipping operations have been growing tremendously.

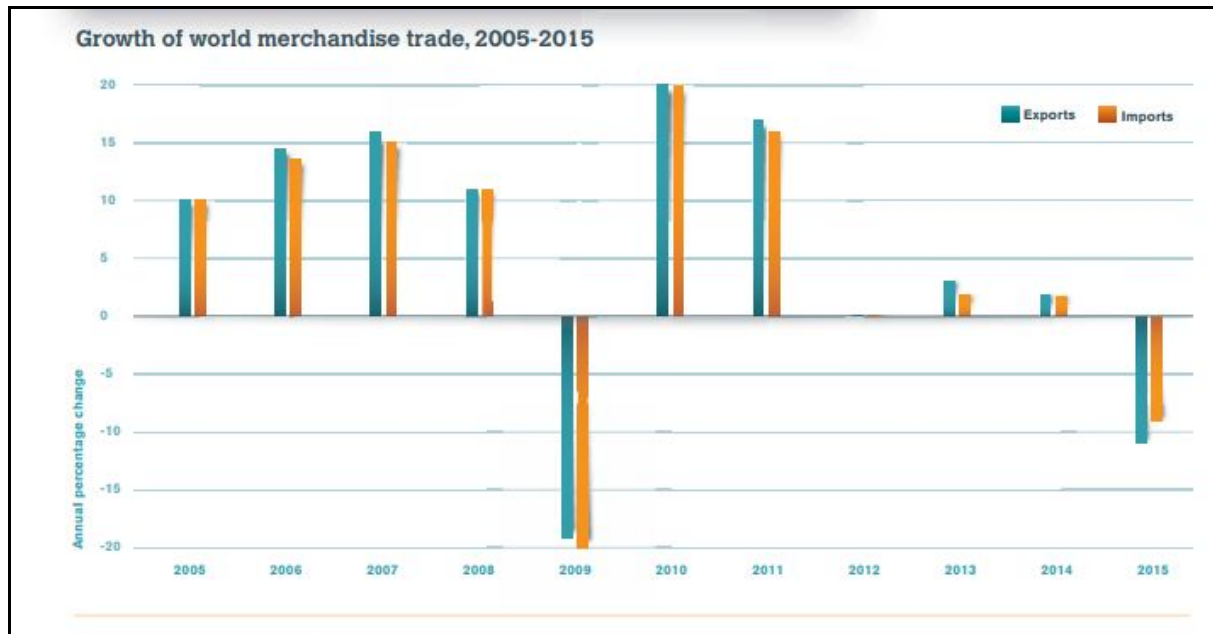
The next 35 years many new ship types were developed, including bulk carriers, supertankers, liquefied gas tankers, chemical tankers, vehicle carriers, lumber carriers and, of course, container-ships.

Contribution of Shipping Industry

According to the World Trade Report submitted by the World trade Organization (WTO) 2016, the ratio of merchandise trade to GDP has fell sharply to 20% in 2009, due to the economic crises but has bounced back to nearly 24.5% in 2010-2011. In 2012-2014 it declined gradually, before falling significantly to 22% in 2015. Merchandise trade to GDP ratio is the average of exports and imports to divide by the GDP of the country. The volume of the world trade is positive but is growing at a diminishing rate recording a growth rate of 2.5%. In the year 2009, the value of world trade was between \$12000 billion to \$13000 billion.



Another reason of drop in the GDP, is the decline in the world commodity prices, which also has a significant impact on the value of merchandise trade in 2015. Despite in growth in the trade volume, the dollar value of the merchandise export fell by 14% in 2015. The weakness of trade in 2015 was due to a number of factors like economic slowdown in China, high recession in Brazil, falling price oil and volatility in exchange market. Demand for imports had reduced in Asia in 2015, but increased in the United States and European countries



From the above figure, the exports and import have sharply fallen in 2009 by -20%, due to the low valuation in commodity pricing and economic crises. But the market stabilized post economic crises and the value of export and import grew by 20% in 2010. In 2015, the market has shown a negative percentage change of 10%. Merchandised value appeared to stabilize in the first quarter of 2016, as the dollar rate eased and oil price recovery.

PERILS OF THE SEA

Perils of Sea refers to the accidents associated to the sea such as over boarding of cargo, theft, sinking, collision, stranding or any other hazardous event. Bill of lading generally contains an exception that the carrier is responsible for loss of cargo by any event other than perils of sea. The various perils of sea are discussed below:

Water damage

Bad weather affects the cargo in many ways. As the ship tosses and shakes in a stormy sea, waves wash overboard and can slowly penetrate into the cargo containers or break bulk cargo on board. The storms of Pacific Ocean produce seventy foot falls, twice every year which are capable to submerge the decks of many containers. Ships can avoid such storms, but at the other times they chose not to avoid due to tight schedule or the storm is moving too fast. This may lead to possibilities of water damage to the cargo unless it is very well protected and packed. (Baldwin, Tom, 1998)

Overboard losses

Major problem for the cargo is the fact that it can be lost overboard in a storm; In November 1998 two American President Lines (APL) ships were caught in a storm and lost a combined 270 containers overboard and additional 550 were damaged. It is a daily occurrence for ships to lose cargo. (Baldwin, Tom, 1997)

Jettison

In some consequential cases the captain of the ship is allowed to toss containers or cargo overboard to lighten the ship or to remove a container that may have become loose that might cause damage to ship this act is called Jettison and it is fairly common occurrence. In this case, an old maritime tradition, called "General Average" dictates how the owners of the jettisoned cargo are compensated; all parties on board pay for this loss. (Michael, 1998)

Fire

All the dangerous cargo like fireworks, compressed gases, explosives, ammunition and chemicals can legally only travel internationally by ocean, and not by air, such cargo is often present on board, if these cargo happen to be poorly stowed, or are damaged in a storm, they might leak and mix with one another, which will result in fires or explosions.

For example, the containership was the victim of an explosion on November 16, 1998 which triggered a fire that was not extinguished until four days later. This ship lost 85 - 90 percent of its cargo in this fire, or approximately 1,100 containers. (Baldwin, Tom, 1999)

Sinking

The possibility of sinking due to bad weather is always present, while not common for modern containerships. Most of the ships lost every year to sinking are older bulk ships, at times even the most modern ships fall prey to a rogue wave and be lost or seriously damaged at sea. The newly formed International Underwriting Association reports on the number of ships lost at sea as well as the human casualties. In 1999, there were 175 ships lost at the sea, with 500 crew members missing or dead. (Jowit, Juliette, 2000)

Stranding

Stranding is the running of a ship on shore it is either accidental or voluntary. Reasons can be mechanical breakdown, stormy weather, and sometimes incompetent crews are responsible for grounding of ships. Stranding happens fairly frequently. The recent improvements made on navigational technologies, such as Global Positioning System, have improved the precision of maps which can be relied on. However, a combination of bad luck and an inaccurate map caused the stranding of Queen Elizabeth 2 ocean liner in August 1992 in Martha's Vineyard Sound, off the coast of Massachusetts. (Associated Press News Release, 1998)

Theft

The risk of theft is much greater on shore, or specifically in transit to the port of arrival/departure it is becoming concern for companies shipping by ocean, majorly because the cargo is easy to resell, such as athletic shoes, cellular telephones, or computer equipment. The total value of cargo theft is estimated to be at least \$30 billion per year worldwide. (Barth, Steve and Michael, 1998)

Piracy

Most of the piracy involve robbers attacking a ship and stealing the crew's possessions or the crew is transferred to a small boat and left adrift, while pirates take the ship and its cargo. The ship is renamed, all evidence of its former identity is destroyed. 285 separate attacks on ships at sea were reported by International Chamber of Commerce in 1999, 459 attacks for 2000 and 335 attacks for 2001. ICC created the Piracy Reporting Centre in Kuala Lumpur, Malaysia, in October 1992. (Piracy report Centre, 2002)

RISK ASSOCIATED WITH AIR SHIPPMENT

The perils to which an air shipment is exposed are minimal, as air transportation is less risky than ocean transportation. Another reason for such minimum risk associated with air shipment is that government have stringent rules regarding safety, pilot training and maintenance. Despite of such safety measures, the two biggest concerns for shippers should be:

Cargo Movements

The aircraft is subjected to rough and bad weather, and sudden accelerations and decelerations, that might cause loss to the goods carried. Since freighter planes do not have to worry about passenger comfort, their pilots do not fly around turbulences the way passenger airline pilots do, and the cargo on the board can be subjected to sudden and fairly volatile moments. Another reason for loss of goods can be due to the take-off and landing of aircrafts. (The freighter forecast, 2000)

Theft and Pilferage

Since most cargo sent by air has high value, it produces a greater risk of being stolen. As the goods are packed in cardboard boxes, but are not palletized, it is somewhat more easily stolen and pilfered. (The freighter forecast, 2000)

CONCLUSION

The Shipping Industry has majorly contributed to the world economy. However, the industry is exposed to various perils of sea which is beyond one's control. These risks can be mitigated and minimized by taking appropriate insurance policy and formulating risk management strategies. Risk other than perils of sea, such as fluctuations in the price of commodities and foreign exchange currencies can be covered by entering into derivative contracts.

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