

A Dissertation Report on the topic
“Impact of Recession on Dry bulk shipping sector”

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A dissertation report submitted in partial fulfillment of the requirements leading
to the award of the degree MBA in Port & Shipping Management



UNIVERSITY OF PETROLEUM & ENERGY STUDIES
Dehradun

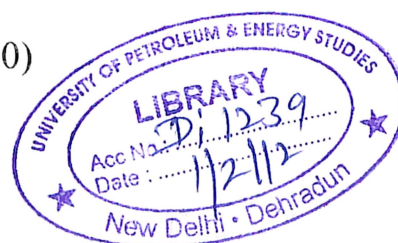
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ACKNOWLEDGEMENT

At the very outset, I convey my special thanks to **University of Petroleum and Energy Studies** that has given me this golden opportunity to study and conduct research on this project.

It give me immense pleasure to have prepared this project under the aegis of **University of Petroleum and Energy Studies, Dehradun** and my special regards to **Mr. K.V. Mohan Rao (Associate Dean and HOD)** who helped in all the possible way in the making of the project.

I am thankful to **Mr. A. Lakshman Rao (Class Coordinator)**, who guided us as to how we could have gone ahead with the project and for his best wishes.

I am highly grateful to my Mentor and Guide **Ms. T. Anupama** who provided me with detailed and exhaustive data and information about the entire Project. I have found her to be highly motivated and her cooperation has been exemplary.

Last but not least, I express my close hearted feeling for all my colleagues who not only helped but provide me the required information in the making of the project.

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DECLARATION

I Yogesh Panday student of MBA (Port & Shipping Management) University of Petroleum & Energy Studies, Dehradun campus hereby declare that I have completed this project under the guidance of Mrs.T.Anupama of University of petroleum & Energy studies.

The information submitted is true and original to the best of my knowledge.

DATE: _____

Signature

PLACE: _____

Yogesh Panday



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CERTIFICATE

This is to certify that the project entitled “**Impact of recession on dry bulk shipping sector**”. A bona research work of **Yogesh Panday** (Roll No: R190308036) is original and has been done under my supervision is partial fulfillment for the award of Masters of Business Administration. This report or a part of this has not been submitted for the award of any other degree of with this university or any other university. I am pleased to say that his performance during the period was extremely satisfactory.

Guide: Ms. T. Anupama

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LIST OF ABBREVIATIONS

1. BDI----- Baltic dry index
2. CDS----- Credit default swaps
3. CDO----- Collateralized debt obligations
4. CIS----- Common wealth of independent states
5. DWT----- Dead weight tonnage
6. EU----- European Union
7. GDP----- Gross domestic product
8. NBER----- National Bureau of economic research
9. UNCTAD- United nations conference on trade and development
10. WESP-----World Economic situation and prospects
11. DESA----- Department of social and economic affairs
12. MBS----- Mortgage based securities
13. ARM----- Adjustable rate mortgage
14. SEC----- Security exchange commission
15. USA----- United states of America

CHAPTER-1

EXECUTIVE SUMMARY

The defaults on sub-prime mortgages (home loan defaults) have led to a major crisis in the US. Sub-prime is a high risk debt offered to people with poor credit worthiness or unstable incomes. Major Banks have landed in trouble after people could not pay back loans. The housing market soared on the back of easy availability of loans. The realty sector boomed but could not sustain the momentum for long, and it collapsed under the gargantuan weight of crippling loan defaults. Foreclosures spread like wildfire putting the US economy on shaky ground. This, coupled with rising oil prices at \$100 a barrel, slowed down the growth of the economy. The basic concept of economic system “multiplier and deflator” can be used as the basis of study. In this study it is analyzed that how the recession has impacted the dry bulk shipping industry. The main basis of defining this impact was the demand side study of dry bulk shipping sector. The major areas of studies dealt in this dissertation are as following-

- Mechanism of economic cycle
- Boom and recession concept of economy
- Root cause analysis for recession 2008
- Impact of recession on major sectors of dry bulk shipping
- Overall demand decline of dry bulk shipping demand due to recession
- Freight rate fluctuations due to recession
- Surplus supply of shipping due to declined demand
- Strategies adopted by market players to cope up with recession

The economic analyses support policymaking, program development and decision-making. The scope of analysis is all modes of transportation and all facets of socioeconomic aspects of transportation services allowing us to understand the changes in the supply and demand of transportation services in World. A number of efforts already have been made to define the market patterns of shipping and its dependability on world economy. The effort to establish a more formal and quantitative relation between various causes of recession and their significance in supply demand balance in shipping has been tried out in this research.

OBJECTIVES AND SCOPE

The main objective of this research is to analyze the impact of economic crisis 2008 on shipping industry. In order to define the conclusive reference an economic analysis has been carried out which will represents following areas of scope.

- The roots cause analysis for economic slowdown.
- The reason behind different consequences on emerging and developing economies.
- The present status of world foreign trade and its growth patterns.
- Impact of fluctuations in seaborne commodity trade on shipping.
- Freight rate fluctuations at the time of recession and its financial implications on ship owners.
- Strategies adopted by shipping industry to maintain market equilibrium.
- Utilization and growth pattern of world fleet and its impact on supply-demand gap.

The scope of study encompasses the analysis of dependability of shipping industry on world economy in regard to basic concept of business cycle. The core of this study is to define how the fluctuations in world economy influence the sub sectors of world trade. The realization of multiplier and deflator concept of economics is considered in this study in regard to shipping industry.

LIMITATIONS OF STUDY

Though utmost care has been taken in data collection and its interpretation but report deals with a macro economic study and may suffer with following limitations.

- ✚ The data used in this study is secondary which may be biased
- ✚ The holistic approach has been adopted in economic study which may include exceptions
- ✚ The study mainly focuses only on specific segment of shipping i.e. Dry bulk shipping.
- ✚ The report can only be used as a reference from informative perspective.
- ✚ Apart from recession, other factors which can create imbalances in shipping market such as technological advancements, oil prices are not considered for study.

The study is based on the market data publically published by leading commercial organizations of shipping such as BIMCO (Baltic international maritime council), ISF (international shipping federation) and other leading market consultancies. The opinions and references may differ with different research methods of different organizations

RESEARCH METHODOLOGY

The methodology used in this research is the descriptive study on economics of shipping in reference to world economy. The detailed analysis of dependability of shipping demand on the flow of goods worldwide is main subject matter of this study. The study can be defined as the analytical review of market information, economic indicators and references already drawn on same topic. An effort of establishing measurable relation between shipping and world economy is proposed which will be based on the market data presented by apex organizations of shipping market such as BDI (Baltic dry index), (ICS) International chamber of shipping etc. The study will be based on secondary data available through websites, various market reports, journals, etc. The study will include an Economic analysis and research in order to understand and explain trends and the evolution of the different elements of the shipping market mechanism. At analysis side growth patterns are studied on the basis of trend analysis. The methodology adopted in analysis is as following-

- Collection of secondary data on world economy
- Analyzing growth pattern of world economy
- Collection of data on recession and its impact on world economy
- Reviewing the market data on dry bulk shipping sector
- Analyzing sector wise impact of recession on dry bulk shipping in terms of demand.
- Analyzing freight rate pattern and influence of recession on it.
- Analyzing supply side of dry bulk shipping market in regard to recession 2008.

It is worth mentioning that the macro economical data about entire world economy and dry bulk shipping market, used in this study is secondary. The data has been collected from the most authenticated sources which include the annual publications of some apex organizations like United Nations Conference on Trade and Development (UNCTAD).

REVIEW OF LITERATURE

The literature written in this study encompasses review of some important articles and publications related to subject. This article includes some annual publications of apex organizations of world trade and economy. The researcher had gone through some of the reports which are stated below and the inferences drawn from the articles and the reports helped to the project in doing the analysis.

“Review of maritime transport 2009”-

It is an annual publication of UNCTAD (United Nations conference of trade and development), the working hand of United Nations. The statistics included in this study about world economic prospects and maritime transportation has been taken from it.

Essay: “Virtual Economy - Root Cause Analysis of the Current Financial Crisis” –

It is an article written by Dr. Mohammad Malkawi (Expert of economical affairs in Bangladesh) in reference to the root cause for recession 2008. The gap between virtual economy and real economy of a country plays a major role in such type of economic crisis. The fundamental idea of virtual economy and real economy gap has been reviewed in research.

“Global dry bulk shipping industry: Analysis report on market crisis” prepared by The Egyptian center for studies of export-import, legal and economic Consultations.-

Economic crisis 2008 has influenced all segments of shipping and a number of studies already have been done in regard to analyze the impact of this economic crisis on shipping market. The motivation behind this dissertation has been generated by above report.

“Maritime economics” by Martin Stop ford (Harper Collins publications) 2nd Chapter-

The basis of economic cycle in shipping has been derived from this book. This is written by CEO of renowned consultancy Clarkson Research group.

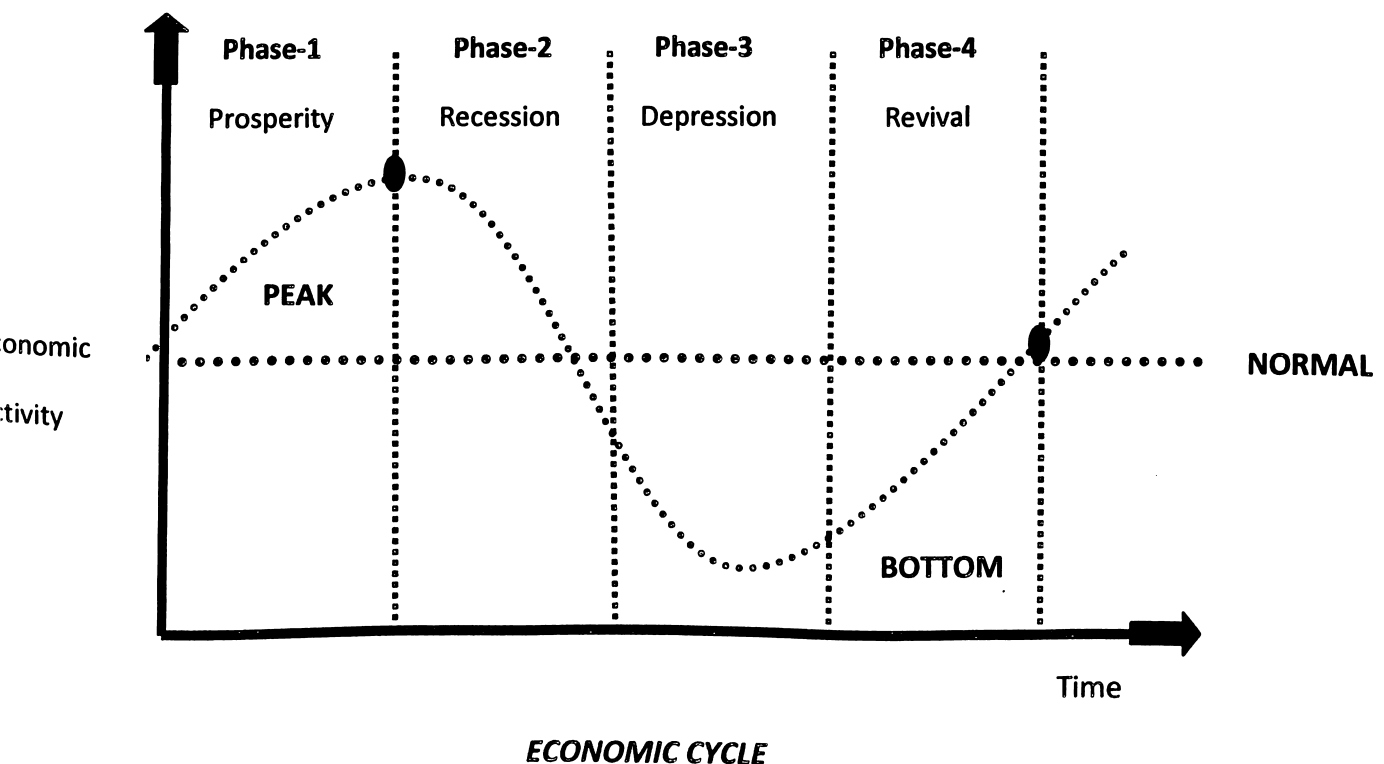
CHAPTER-2

INTRODUCTION-

The aggregate system of production, distribution and consumption of goods and services in a society or country creates its economic system. The economic environment of a society directs its industrial, social and financial status in world .As the Integration of national economies into a international world economy has spread the inter-dependability between countries and regions has created a unified economic and social system. The reduction and removal of trade barriers between countries has converted the world economy as a globalised market in which the countries can participate based on their need of exportation and importation of goods, services. The flow of goods and services throughout the world is associated with flow of capital and finance which is essential for worldwide economic development.

MECHANISM OF ECONOMIC CYCLE-

The world economic system is subjected to get influenced by a number of socio-economic elements. Time by time these influences can be seen in form of highly accelerated economic growth called as “*BOOM*” or depressed economic activities resulting in low production, low employment, and deflation called as “*RECESSION*”. Because of the high level of inter-dependability between national economies of countries these economic wide fluctuations in one economy creates a chain reaction in overall unified world economy .Although there is no defined pattern of these fluctuations. In order to understand the economic system and its fluctuations a number of studies have been carried out and in general the four basic phases of economic cycle are defined which comprises the economic system and its volatility.



- **Phase-1-**

Prosperity suggests an increase in the level of economic activities (as indexed by macro economic variables like income, employment, and output) above the normal level till it reaches a 'peak'.

- **Phase-2-**

Recession suggest a slow but steady decline in economic activity towards a normal level. The U.S. based National Bureau of Economic Research (NBER) defines a recession more specifically as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP growth, real personal income, employment, industrial production, and wholesale-retail sales."

- **Phase-3-**

Depression suggests a further rapid decline in economic activity and business condition below the normal level till it reaches the 'bottom'.

- **Phase-4-**

Revival means a slow recovery in economic activity and business conditions towards the normal level. Phase 1 and phase 4 together constitute the upswing of an economic cycle whereas phase 2 and phase 3 together constitute the downswing of an economic cycle.

CONCEPTUAL FRAMEWORK OF ECONOMIC CYCLE-

The explanation of fluctuations in aggregate economic activity is one of the primary concerns of macroeconomics. The most commonly used framework for explaining such fluctuations is Keynesian economics. In the Keynesian view, business cycles reflect the possibility that the economy may reach short-run equilibrium at levels below or above full employment. If the economy is operating with less than full employment, i.e., with high unemployment, then in theory monetary policy and fiscal policy can have a positive role to play rather than simply causing inflation or diverting funds to inefficient uses. Keynesian models do not necessarily imply periodic business cycles. However, simple Keynesian models involving the interaction of the Keynesian multiplier and accelerator give rise to cyclical responses to initial shocks. Paul Samuelson's "oscillator model" is supposed to account for business cycles. The amplitude of the variations in economic output depends on the level of the investment, for investment determines the level of aggregate output (multiplier), and is determined by aggregate demand (accelerator). The basic concepts in this regard are as following.

- **Resource allocation /Investment pattern-**

The resources on earth are limited and it is a matter of paramount significance that how well the resources are employed to produce goods and accelerate economic activities. The basic resources involved in any economic activity are man, material, money, and machine. A prudent decision of resource allocation in the areas of maximum return and positive growth can accelerate economic growth towards boom and in contrast a decision of employing scarce resources of economy in any sector without proper study of its profitability and liquidity in future can lead to high level of financial instability and lack of liquidity in market. At macro level of economy the investment decisions requires billions of money, technological revolutions and the precious manpower. All these resources directly or indirectly come from the general public in form of taxes and duties so investment pattern of these resources at macro level of economy directly influence the economic worth of the general public which is the basic element of any society.

- **Accelerator concept-**

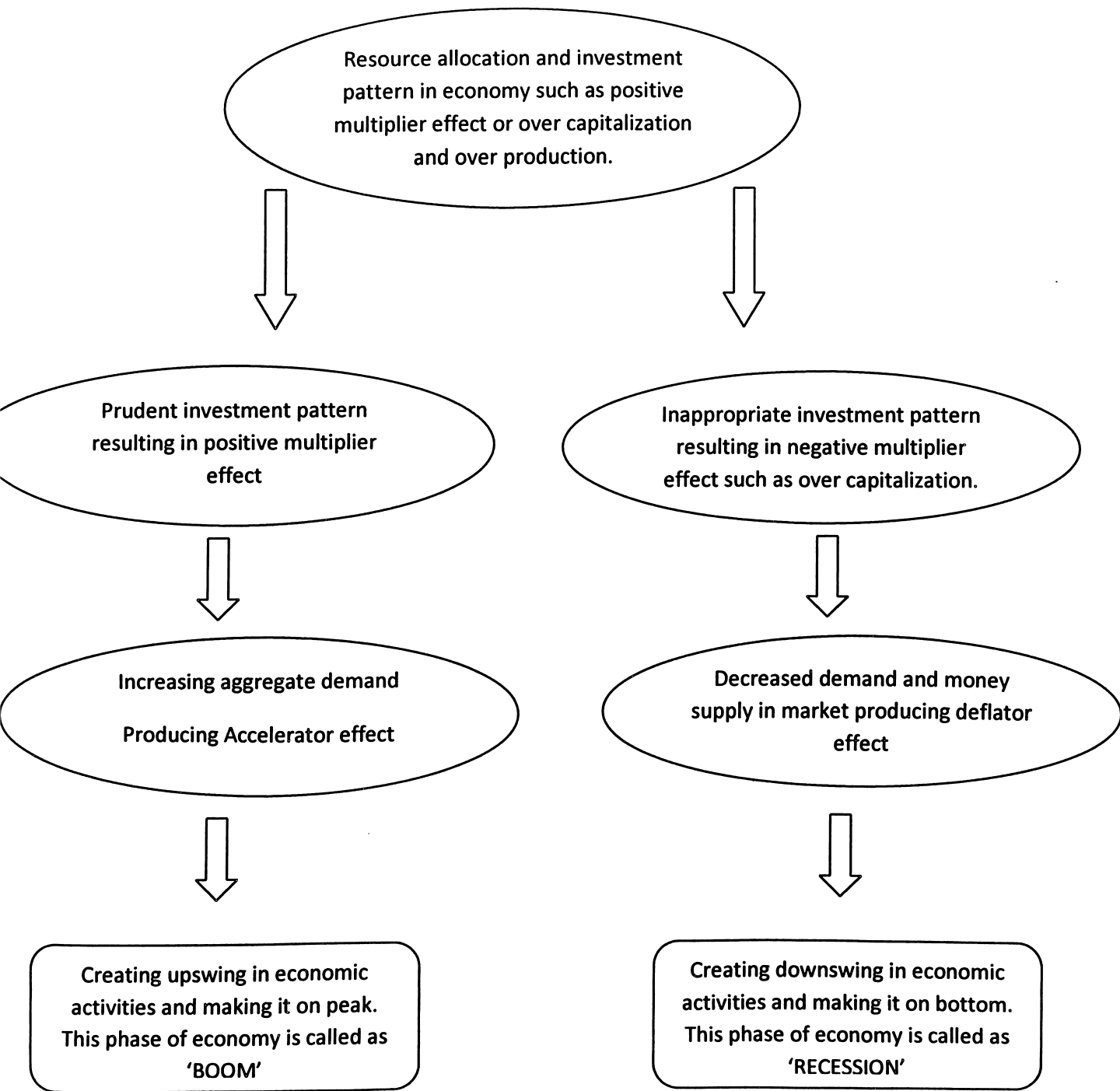
Based on the resource allocation and investment decision the accelerator starts to operate in economic system. An accelerator can be defined as the aggregate demand generated by the public due to increased level of income and employment as a result of prudent investment pattern. At macro level of economy when business activities move towards the peak the increment economic variables of economy such as industrial production, employment, personal income creates the growing aggregated demand.

- **Multiplier concept-**

Multiplier effect of economy can be defined as the aggregate output of economy in terms of employment, income generation and future investment pattern created through a trend. The one time investment in any business activity may create positive or negative multiplier in economy over a period of time. The return and liquidity generated by any business activity over a period of time creates demand due to income generation through a chain reaction of business activities.

- **Deflator effect-**

In economics, deflation refers to a general reduction in the level of prices below zero percent year-on-year inflation. Deflation should not be confused with a temporary fall in prices; instead, it is a sustained fall in prices that occurs when the inflation rate passes down below zero percent. It is a condition created by inappropriate investment pattern such as over capitalization and over production resulting in negative multiplier effect which causes shortage of money in market and decreased demand. When large amount of production chases little amount of money in hands of consumer the prices come down and it further creates financial instability in market.



FLOW CHART- PRESENTATION OF ECONOMIC CYCLE

(Figure-2)

AN OVERVIEW OF WORLD ECONOMY IN REGARD TO RECESSION 2008-

World economy can be defined as a cluster of regional and national economies functioning in state of high inter-dependability in a unified system. In order to examine the world economy as a cluster it can be sub divided into three major categories.

(Table-1)

Classification of world economy

GROUP	MAJOR ECONOMIES
Developed economies	United states , Japan, Germany, France, Italy United kingdom
Developing economies	India, China, Brazil ,South Africa
Transition economies	Russian Federation

The year 2008 marked a major turning point in the history of the world economy and trade. Growth in the world economy measured by gross domestic product (GDP) slowed abruptly in the last part of 2008, as the 2007 deepened and entered a more severe phase. Global GDP expanded by just 2.0 per cent, a much slower rate than the 3.7 per cent recorded in 2007, and below the annual average rate of 3.5 per cent recorded during the period 1994–2008. The overall picture was one of continuing growth in the first three quarters of 2008 with oil-exporting countries in particular benefiting from record high commodity prices, followed by faltering growth in late 2008 and then spreading to developing economies and countries with economies in transition. World output in 2009 is projected to contract by 2.7 per cent, heralding demand for maritime transport is derived from economic activities and trade, the global economic downturn entails serious implications for the maritime transport sector and seaborne trade. Developed economies are leading the global downturn, with most of their economies already in recession. Growth of 0.7 per cent in 2008 GDP grew by 1.1 per cent in the United States and by less than 1 per cent in European Union. Japan and Italy were the hardest hit, with their outputs falling by 0.6 per cent expected to shrink by 4.1 per cent in 2009. Developing economies and countries with economies in transition have also felt the brunt of the downturn. In 2008, developing economies expanded output by 5.4 percent down from 7.3 percent in 2007. Although significantly reduced, compared to its double digit growth rate of the past few years China continued to lead, with its GDP growing by 9.0 per cent. Other major developing economies including Brazil, South Africa and India recorded a positive growth rates compared to the performance they achieved in 2007. In aggregate, developing economies are expected to grow marginally in 2009 (1.3 per cent), with some countries including Brazil and South Africa suffering GDP contractions (of -0.8 per cent and -1.8 per cent, respectively). Countries with economies in transition are affected too, with growth slowing to 5.4 per cent in 2008, compared to a rate of 8.4 per cent in 2007. The 2009 outlook for these economies was bleak, with GDP expected to fall by 6.2 per cent for the entire group, and by 8.0 per cent for the Russian Federation.

(Table -2)

WORLD ECONOMIC GROWTH 2006-2009*(Annual percent change)*

REGION/ COUNTRY	YEARS			
	2006	2007	2008	2009
World	3.9	3.7	2.0	-2.7
Developed economies- <i>Of which-</i>	2.8	2.5	0.7	-4.1
United states-	2.8	2.0	1.1	-3.0
Japan-	2.0	2.4	-0.6	-6.5
Germany-	3.0	2.5	1.3	-6.1
France-	2.4	2.1	0.7	-3.0
Italy-	1.9	1.5	-1.0	-5.5
United kingdom-	2.9	3.1	0.7	-4.3
Developing economies- <i>Of which-</i>	7.2	7.3	5.4	1.3
China-	11.1	11.4	9.0	7.8
India-	9.7	9.0	7.3	5.0
Brazil-	4.0	5.7	5.1	-0.8
South Africa-	5.4	5.1	3.1	-1.8
Transition economies- <i>Of which-</i>	7.5	8.4	5.4	-6.2
Russian Federation-	6.7	8.1	5.6	-8.0

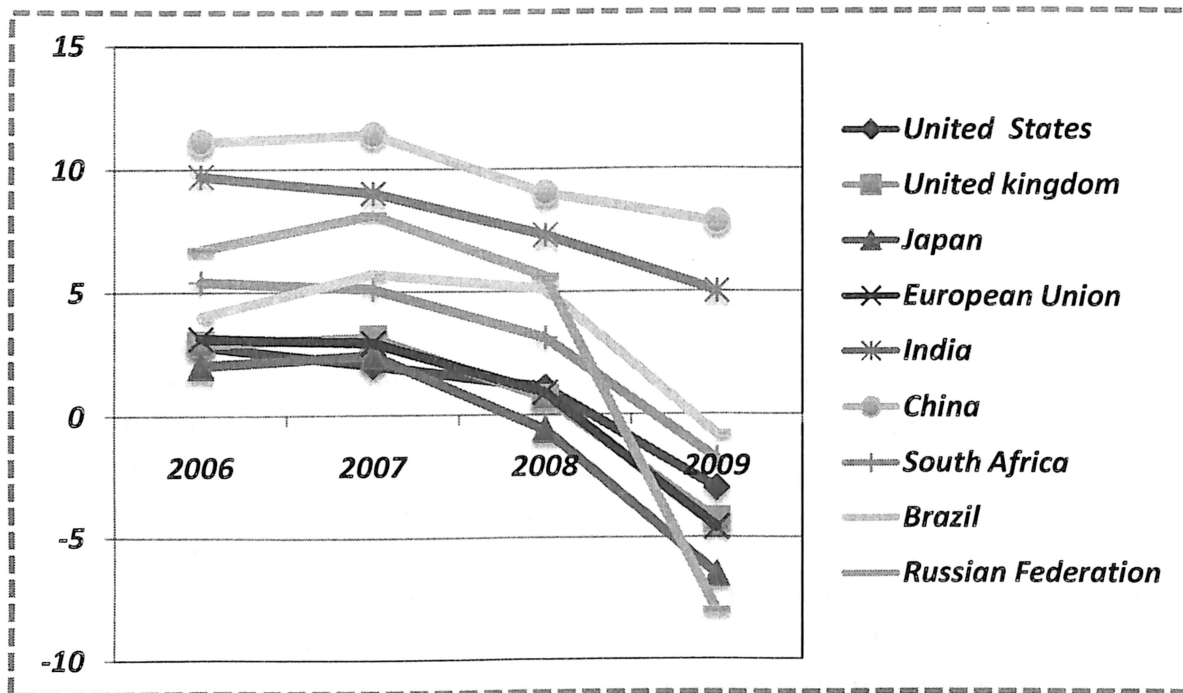
Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development.

(Figure-3)

World GDP growth, 2007—2009 selected countries

(Annual Percent change)



Source-

The “Review of maritime transport 2009” published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development.

INFERENCE-

In above table and chart it is clearly indicated that developed economies like United States and Japan have contributed a lot in creating an overall recessionary phase of world economy. Developed economies have recorded a considerable negative growth in GDPs compelling developing economies to grow but at a slower rate compared to previous years. Almost all major economies of world have faced a downturn in economic activities resulting in financial and fiscal crisis. An outlook of these table and charts makes us clear about the existence of “RECESSION”.

RECESSION 2008 -ROOT CAUSE ANALYSIS –

The global financial crisis started with bursting of October 2008 US financial bubble is not an isolated phenomenon; rather it is deeply linked to the recession of US economy following the boom in November 2007. The U.S. recession that began in December 2007 is expected to be the longest in post World War II history. In order to discuss the root cause behind the recession in US economy the segregation between real and virtual economy is of paramount significance.

Virtual economy vs. Real economy-

A real economy which is reflected by the level of cash on corporate books, and an inflated, exaggerated view which is reflected in the current stock values of the market. The second view of the economy will be referred to as a virtual economy in this article. Virtual economy, in this context, differs from what is being called virtual economy commerce, where customers trade in a virtual imaginary product with certain specifications and an imaginary value. However, this will not be the subject of this study. The second type of virtual economy (VE) is the one that is important and is strongly related to the failure of the financial capitalist system as is being witnessed today. VE allows the economy to appear much larger than its real size. This economy is based on the assumption that the real money will not be tapped into and therefore, it is possible to deal with an assumed larger (virtual) value for the money. A parallel concept to virtual economy exists in computer systems, where the concept of virtual memory is used. Virtual memory is a special type of organization which allows the memory in the system to appear much larger than the real size of the memory. With this type of organization, it is possible to execute program applications which require much larger memory than the system actually has. Virtual memory organization in computer systems remains a smart way of running applications. However, there are some cases where an application may break the limits of virtual memory and cause the system to thrash, i.e. to fail. This happens when an application insists on using more than the size of real memory instantly, at one given time. In a similar manner, virtual economy (organization) provides two views of the economy. One is the real value of commodities and services in a given economy which corresponds to the real economic growth and production. The second view of the economy represents the imaginary value of stock prices and the accumulation of interest (usury) in the banks. A virtual economy system, similar to a virtual memory systems, is bound to crash (thrash) at any point when the instant demand for finance at any given time exceeds the real value of the real economy. The current financial crisis in the US and the world at large is a striking example of a virtual economy crashing (or thrashing). The phenomenon of a virtual economy, where the money in transactions appears much larger than the real money, began to surface at the level of state economies at the end of the 19th century when financial markets began to take shape in New York. This phenomenon grew to be an integral part of capitalist economies, especially in the US and in Europe due to three major reasons, namely: stock markets, interest based economy.

Stock markets and the Virtual Economy-

Stock market activities at the start of the 20th century created a new phenomenon in the economy, where the wealth associated with stock values grew at a much higher rate than the wealth associated with the real economy. When the stock market collapsed in New York in 1929, economists attributed the crash to the great difference between the inflated values of stocks and the values of the real assets of the economy. To understand this aspect it has been found that the prices of financial market increased during the preceding period from 1925 to 1929 by 120%, while economic growth for the same period did not exceed 17%. And when the market collapsed, it lost over 93% from its value, which means that the market returned to its real value which was obviously much lower than what the stock market indicated. The same scenario repeated itself in 1987 when the market collapsed again, and as observers again noted financial market had been grossly inflated compared with the real size of the economy, such that the difference between the virtual economy and the real economy was more than 200%. And by the end of the twentieth century the virtual economy was again three times the size of the real market value and this scenario came to be known as the Internet (or DOT COM) Bubble. The result is that the nominal values of stocks do not reflect the reality of economic production. It is possible to increase the value of the shares of a given company without any real increase in production or profit achieved by that company.

These kind of financial activities, transactions and dealings create two faces for the economy: a real face linked to the economic growth and production which indicates the real strength of the economy. And an imaginary side, that reflects the image seen and observed by the local and global community. When the difference between the two sides is small, there does not appear to be a serious problem in the economy. When the difference, however, is vast as is the case now, in 1987 and in 1929 it is dangerous and may lead to devastating consequences for many years, as happened with the Asian Tiger economies in the late 1990's. The capitalist countries are aware of the magnitude of the problem, and its seriousness, and keep developing plans and alternatives to prevent or delay an inevitable devastating collapse, to mitigate the effects of the collapse, or to exit quickly in case a collapse happens.

The direct cause of a stock market collapse is the attempt made by some investors to transfer what they own from fictitious money to real money. As an example, let's assume that the real money is 10% of the total virtual money. This means the amount that can be turned into real money, is no more than 10% of total capital, and the rest is equal to none. So when the owners of the shares notice that a major investor started selling his possessions (to convert them to real money), they panic and start selling their possessions hoping to cash in some real money before the collapse. Then a collapse takes place and brings everything to the foundation (real money).

Let's work through the example more thoroughly. Assume that there are 1000 shares in a company. Also, assume that each share is worth \$100. So the total stock value of the company is

\$100,000. For the sake of argument, assume that the real value of the company is \$10,000. In other words, the real value of the company is 10% of the virtual value. Now assume that a major investor sells 50 stocks at \$100 and cashes \$5000. If the rest of the share holders start selling their shares hoping to get real money from the company, they will be able to get no more than \$5000 at best, which translates into \$5 per share. Now if one more person was able to sell 50 shares at say \$50 and cashes \$2500, then the rest of the crowd will have to share the remaining \$2500 at \$2.5 a share. Eventually when all \$10,000 are gone, the share will go to zero. The danger of the virtual economy is that it creates a state of delusion in the economy, which can deceive senior economists and politicians, and drives them to undertake projects larger than their real wealth. There could be a temporary positive effect from this delusion, especially when competing with others for large projects. America has benefited greatly while in a conflict with the Soviet Union during the cold war era, where the Soviet Union used real money to finance its projects, and America used the virtual economy for its own projects. But when a state is exposed to a financial or political crisis larger than the size of its real economy, the illusion may push the state into a losing gamble. The current wars in Iraq, Afghanistan, Somalia and the devastating effects of hurricanes in the US must have contributed to the recent financial crisis in the west. Some countries may sometimes intentionally create real crisis for other countries that depend on the virtual economy, in an attempt to push them to the limits of their real economies. Note also that a sudden collapse of the virtual economy brings the economy to levels much lower than the real value of the economy.

The Usury and the Virtual economy-

The objective of the financial policy in the capitalist economy, as stated by the bylaws of the Federal Reserve Bank in the USA, is to maintain the highest return on production and labor and to sustain price stability. This objective will be achieved through a mechanism that controls the value of usury (interest rate). During a recession in the economy, the state reduces the value of usury in order to encourage borrowing and increase the demands on goods and services. Conversely, the value of usury would be increased to curb inflation. The point here is to recognize the importance of usury for the capitalist economy as the most important tool to control the ups and downs of the economy. This explains the wide spread of financial institutions that offer loans to individuals, companies, institutions and even governments themselves.

Within this usury based economy, the money flows in two directions. In one direction, the money flows from the investors towards the bank in a form of deposit payments. The other direction is from the banks to the investors in a form of loan payments. Except for cases where the inflation rate is higher than the interest rate during the repayment period, the amount of money going towards the bank is steadily more than the amount of money going towards the investors. If the real money is the money which the investors deal with to increase production and to maintain price stability as required by the fiscal policy, this money will certainly be less

than the money that accumulates in the banks. This is the main reason for the difference between the real money and the virtual money. And there are two cases that lead to this phenomenon.

The first case is when the bank performs the lending process. Let's assume that the bank provided a loan of 100 million dollars with 5% usury for 1 year. Let's assume also that the inflation during this period was 2%, the real interest rate becomes 3%. Now presume as well that the borrowed money (100 million) was spent on profitable projects and the total profit was 2%. Now the total value to be paid back to the bank = 103 million dollars, while the real money which is the sum of the initial money and the profit is equal to \$102 million. This means that \$million accumulates in the bank account which does not correspond to actual value in reality. Note that the biggest borrowers in the world are governments which borrow money to pay for their operations and not for profit production. Consequently, the accumulated pure usury will be much higher than the ratio of (1%) in the above example. That is why usury money can reach during a specific period of time hundreds of billions of dollars and up to twice the amount of real money. It is worthwhile to know that the real economic growth rate in the US was no more than 3.5% during the last (30) years, while the actual interest rate was more than (8%). This means that virtual money over (30) years was (135%) of the actual value of money. So if the actual value of the US economy was 5 trillion dollars, the value of usury excess of the true value will be \$6.75 trillion dollars. This makes the virtual money value (11.75) trillion dollars.

The second case that leads to an increase in the virtual money is when investors deposit their money in the banks for investment in usury. If investors deposit in the bank (100) million with (5%) interest after taking into account inflation, and for a period of (10) years. The value of the money invested becomes (150) million. For the bank not to lose money, it in turn invests the (100) million. Let's say the bank gains (7%) by investing its money (\$ 170 million); if (5%) of that investment was part of productive investment by the bank and the rest was pure usury, we will have (20) million usurious money which has no real value in reality. The reality is that most banks do not invest their money in production processes, but rather by investing in other banks and by recycling the loans to other borrowers. This makes the virtual money increase repeatedly and multiple times.

Either way, the resultant quantity of the money accumulated in the banks is much more than the quantity of the initial real money that represents the (real) production. However, what encourages and motivates the continuation of the increase in virtual money is the absence of the urgent need to withdraw large amount of funds from many banks at once. When one of these banks gets exposed to pressure from investors and depositors to withdraw amounts of money (Run On The Bank) that exceed the amount of the real money, the bank soon collapses for the lack of ability to meet customer needs, as happened with the Bank of Boston in the early eighties of the last century. If the Government does not intervene to save the bank and back it up by its funds, a collapse of the bank becomes imminent. When the problem becomes severe and has the potential of affecting several financial institutions, the big countries such as the US begin to print

and pump money that could match the amount of the virtual money. This leads to massive inflation, decline in prices and weak production and may lead to a huge financial disaster. Sometimes a disaster may occur by withdrawing large amounts of investors' money at the same time from the banks (similar to the real estate and credit crisis in the US).

Breaking away with Gold standards-

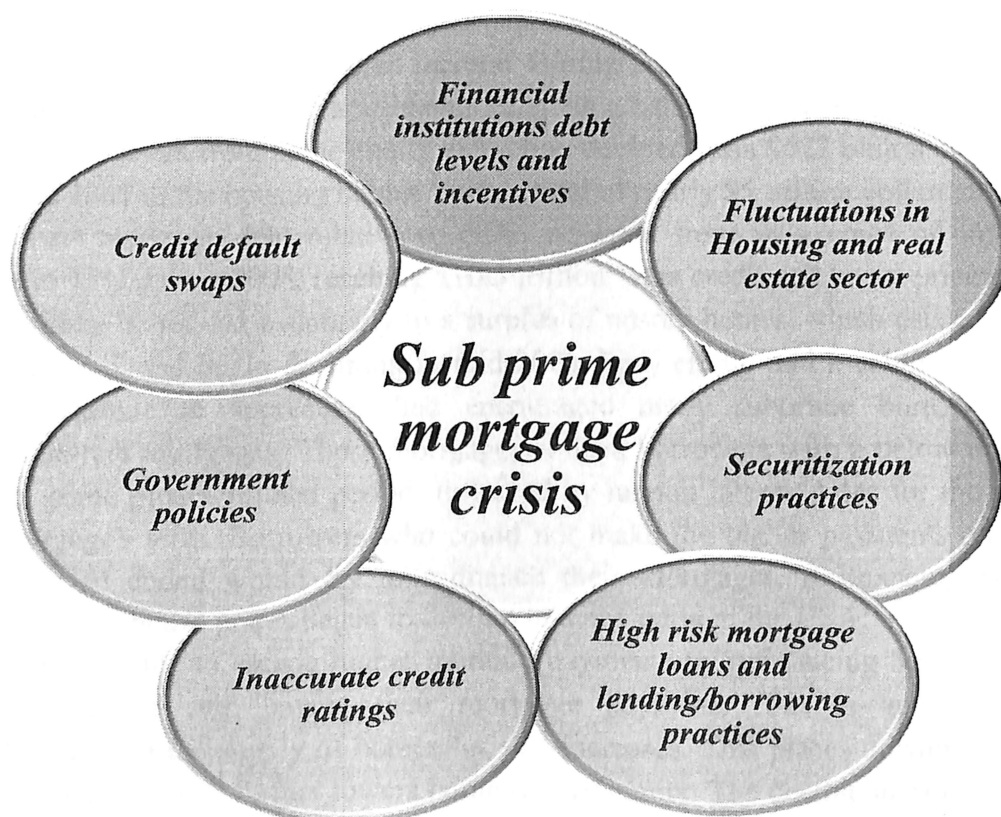
The virtual economy would have not become a genuine trend, if the main currency (i.e. Dollar) remained linked to the gold standard as per the Bretton Woods Agreement in 1944. The agreement established a clear base of exchange into gold within a fluctuation rate of not more than (1%); it also set the bases on how to convert currencies into gold. The existence of such a law cannot permit any State economy to appear much larger than its real size. That would cost its stockpile of gold to deplete. There will not be sufficient gold to match the fictitious numbers of the virtual economy. But when the US turned against the Bretton Woods Agreement (in the early 1970's) and broke the link between the dollar and the gold standard, it freed its economy from the rein of the market prices without any restrictions. The US was not satisfied with breaking the linkage between the dollar and the gold, but it also broke the link between the value of its currency and the economy. It made it possible for money to grow more rapidly and at much higher rates than the growth of the economy. It was this separation between money and gold on one hand, and between money and economic growth on the other that enabled the existence of the virtual economy and its tendency to grow at an alarming rate.

SUBPRIME MORTGAGE CRISIS IN US AND ITS CAUSES-

The subprime mortgage crisis is an ongoing real estate and financial crisis triggered by a dramatic rise in mortgage delinquencies and foreclosures in the United States, with major adverse consequences for banks and financial markets around the globe. The crisis, which has its roots in the closing years of the 20th century, became apparent in 2007 and has exposed pervasive weaknesses in financial industry regulation and the global financial system. The immediate cause or trigger of the crisis was the bursting of the United States housing bubble which peaked in approximately 2005–2006. High default rates on "subprime" and adjustable rate mortgages (ARM) began to increase quickly thereafter. An increase in loan incentives such as easy initial terms and a long-term trend of rising housing prices had encouraged borrowers to assume difficult mortgages in the belief they would be able to quickly refinance at more favorable terms. However, once interest rates began to rise and housing prices started to drop moderately in 2006–2007 in many parts of the U.S., refinancing became more difficult. Defaults and foreclosure activity increased dramatically as easy initial terms expired, home prices failed to go up as anticipated, and ARM interest rates reset higher. Falling prices also resulted in homes worth less than the mortgage loan, providing a financial incentive to enter foreclosure. The ongoing foreclosure epidemic that began in late 2006 in the U.S. continues to be a key factor in the global economic crisis, because it drains wealth from consumers and erodes the financial

strength of banking institutions. In the years leading up to the crisis, significant amounts of foreign money flowed into the U.S. from fast-growing economies in Asia and oil-producing countries. This inflow of funds combined with low U.S. interest rates from 2002-2004 contributed to easy credit conditions, which fueled both housing and credit bubbles. Loans of various types (e.g., mortgage, credit card, and auto) were easy to obtain and consumers assumed an unprecedented debt load. As part of the housing and credit booms, the amount of financial agreements called mortgage-backed securities (MBS), which derive their value from mortgage payments and housing prices, greatly increased. Such financial innovation enabled institutions and investors around the world to invest in the U.S. housing market. As housing prices declined, major global financial institutions that had borrowed and invested heavily in subprime MBS reported significant losses. Defaults and losses on other loan types also increased significantly as the crisis expanded from the housing market to other parts of the economy. Total losses are estimated in the trillions of U.S. dollars globally.

(Figure-4)



Major factors contributed in subprime mortgage crisis in US

- **Fluctuations in housing and real estate sector-**

Low interest rates and large inflows of foreign funds created easy credit conditions for a number of years prior to the crisis, fueling a housing market boom and encouraging debt-financed consumption. The USA home ownership rate increased from 64% in 1994 (about where it had been since 1980) to an all-time high of 69.2% in 2004. Subprime lending was a major contributor to this increase in home ownership rates and in the overall demand for housing, which drove prices higher. Between 1997 and 2006, the price of the typical American house increased by 124%. During the two decades ending in 2001, the national median home price ranged from 2.9 to 3.1 times median household income. This ratio rose to 4.0 in 2004, and 4.6 in 2006. This housing bubble resulted in quite a few homeowners refinancing their homes at lower interest rates, or financing consumer spending by taking out second mortgages secured by the price appreciation. USA household debt as a percentage of annual disposable personal income was 127% at the end of 2007, versus 77% in 1990. While housing prices were increasing, consumers were saving less and both borrowing and spending more. A culture of consumerism is a factor "in an economy based on immediate gratification." Household debt grew from \$705 billion at yearend 1974, 60% of disposable personal income to \$7.4 trillion at yearend 2000, and finally to \$14.5 trillion in midyear 2008, 134% of disposable personal income. During 2008, the typical USA household owned 13 credit cards, with 40% of households carrying a balance, up from 6% in 1970. Free cash used by consumers from home equity extraction doubled from \$627 billion in 2001 to \$1,428 billion in 2005 as the housing bubble built, a total of nearly \$5 trillion dollars over the period. U.S. home mortgage debt relative to GDP increased from an average of 46% during the 1990's to 73% during 2008, reaching \$10.5 trillion. This credit and house price explosion led to a building boom and eventually to a surplus of unsold homes, which caused U.S. housing prices to peak and begin declining in mid-2006. Easy credit, and a belief that house prices would continue to appreciate, had encouraged many subprime borrowers to obtain adjustable-rate mortgages. These mortgages enticed borrowers with a below market interest rate for some predetermined period, followed by market interest rates for the remainder of the mortgage's term. Borrowers who could not make the higher payments once the initial grace period ended would try to refinance their mortgages. Refinancing became more difficult, once house prices began to decline in many parts of the USA. Borrowers who found themselves unable to escape higher monthly payments by refinancing began to default. As more borrowers stop paying their mortgage payments (this is an on-going crisis), foreclosures and the supply of homes for sale increases. This places downward pressure on housing prices, which further lowers homeowners' equity. The decline in mortgage payments also reduces the value of mortgage-backed securities which erodes the net worth and financial health of banks. This vicious cycle is at the heart of the crisis. By September 2008, average U.S. housing prices had declined by over 20% from their mid-2006 peak. This major and unexpected decline in house prices means that many borrowers have zero or negative

equity in their homes, meaning their homes were worth less than their mortgages. As of March 2008, an estimated 8.8 million borrowers 10.8% of all homeowners had negative equity in their homes, a number that is believed to have risen to 12 million by November 2008.

- **High-risk mortgage loans and lending/borrowing practices-**

In the years before the crisis, the behavior of lenders changed dramatically. Lenders offered more and more loans to higher-risk borrowers. Subprime mortgages amounted to \$35 billion (5% of total originations) in 1994, 9% in 1996, \$160 billion (13%) in 1999, and \$600 billion (20%) in 2006. A study by the Federal Reserve found that the average difference between subprime and prime mortgage interest rates (the "subprime markup") declined significantly between 2001 and 2007. The combination of declining risk premia and credit standards is common to boom and bust credit cycles. In addition to considering higher-risk borrowers, lenders have offered increasingly risky loan options and borrowing incentives. In 2005, the median down payment for first-time home buyers was 2%, with 43% of those buyers making no down payment whatsoever. By comparison, China has down payment requirements that exceed 20%, with higher amounts for non-primary residences .Growth in mortgage loan fraud based upon US Department of the Treasury Suspicious Activity Report Analysis. One high-risk option was the "No Income, No Job and no Assets" loans, sometimes referred to as Ninja loans. Another example is the interest-only adjustable-rate mortgage (ARM), which allows the homeowner to pay just the interest (not principal) during an initial period. Still another is a "payment option" loan, in which the homeowner can pay a variable amount, but any interest not paid is added to the principal. An estimated one-third of ARMs originated between 2004 and 2006 had "teaser" rates below 4%, which then increased significantly after some initial period, as much as doubling the monthly payment. The proportion of subprime ARM loans made to people with credit scores high enough to qualify for conventional mortgages with better terms increased from 41% in 2000 to 61% by 2006. However, there are many factors other than credit score that affect lending. In addition, mortgage brokers in some cases received incentives from lenders to offer subprime ARM's even to those with credit ratings that merited a conforming (i.e., non-subprime) loan. Mortgage underwriting standards declined precipitously during the boom period. The use of automated loan approvals allowed loans to be made without appropriate review and documentation. In 2007, 40% of all subprime loans resulted from automated underwriting.

- **Securitization practices-**

The traditional mortgage model involved a bank originating a loan to the borrower/homeowner and retaining the credit (default) risk. With the advent of securitization, the traditional model has given way to the "originate to distribute" model, in which banks essentially sell the mortgages and distribute credit risk to investors through mortgage-backed securities. Securitization meant that those issuing mortgages were no longer required to hold them to maturity. By selling the

mortgages to investors, the originating banks replenished their funds, enabling them to issue more loans and generating transaction fees. This may have created moral hazard and increased focus on processing mortgage transactions rather than ensuring their credit quality. Securitization accelerated in the mid-1990s. The total amount of mortgage-backed securities issued almost tripled between 1996 and 2007, to \$7.3 trillion. The securitized share of subprime mortgages (i.e., those passed to third-party investors via MBS) increased from 54% in 2001, to 75% in 2006. American homeowners, consumers, and corporations owed roughly \$25 trillion during 2008. American banks retained about \$8 trillion of that total directly as traditional mortgage loans. Bondholders and other traditional lenders provided another \$7 trillion. The remaining \$10 trillion came from the securitization markets. The securitization markets started to close down in the spring of 2007 and nearly shut-down in the fall of 2008. More than a third of the private credit markets thus became unavailable as a source of funds.

- **Inaccurate credit ratings-**

Credit rating agencies are now under scrutiny for having given investment-grade ratings to MBSs based on risky subprime mortgage loans. These high ratings enabled these MBS to be sold to investors, thereby financing the housing boom. These ratings were believed justified because of risk reducing practices, such as credit default insurance and equity investors willing to bear the first losses. However, there are also indications that some involved in rating subprime-related securities knew at the time that the rating process was faulty. Critics allege that the rating agencies suffered from conflicts of interest, as they were paid by investment banks and other firms that organize and sell structured securities to investors. On 11 June 2008, the SEC proposed rules designed to mitigate perceived conflicts of interest between rating agencies and issuers of structured securities. On 3 December 2008, the SEC approved measures to strengthen oversight of credit rating agencies, following a ten-month investigation that found "significant weaknesses in ratings practices," including conflicts of interest. Between Q3 2007 and Q2 2008, rating agencies lowered the credit ratings on \$1.9 trillion in mortgage backed securities. Financial institutions felt they had to lower the value of their MBS and acquire additional capital so as to maintain capital ratios. If this involved the sale of new shares of stock, the value of the existing shares was reduced. Thus ratings downgrades lowered the stock prices of many financial firms.

- **Government policies-**

Both government failed regulation and deregulation contributed to the crisis. In testimony before Congress both the Securities and Exchange Commission (SEC) conceded failure in allowing the self-regulation of investment banks. Increasing home ownership has been the goal of several presidents including Roosevelt, Reagan, Clinton and G.W.Bush. In 1982, Congress passed the Alternative Mortgage Transactions Parity Act (AMTPA), which allowed non-federally chartered housing creditors to write adjustable-rate mortgages. Among the new mortgage loan types

created and gaining in popularity in the early 1980s were adjustable-rate, option adjustable-rate, balloon-payment and interest-only mortgages. These new loan types are credited with replacing the long standing practice of banks making conventional fixed-rate, amortizing mortgages. Among the criticisms of banking industry deregulation that contributed to the savings and loan crisis was that Congress failed to enact regulations that would have prevented exploitations by these loan types. Subsequent widespread abuses of predatory lending occurred with the use of adjustable-rate mortgages. Approximately 80% of subprime mortgages are adjustable-rate mortgages. In 1995, the GSEs like Fannie Mae began receiving government tax incentives for purchasing mortgage backed securities which included loans to low income borrowers. Thus began the involvement of the Fannie Mae and Freddie Mac with the subprime market. In 1996, HUD set a goal for Fannie Mae and Freddie Mac that at least 42% of the mortgages they purchase are issued to borrowers whose household income was below the median in their area. This target was increased to 50% in 2000 and 52% in 2005. From 2002 to 2006, as the U.S. subprime market grew 292% over previous years, Fannie Mae and Freddie Mac combined purchases of subprime securities rose from \$38 billion to around \$175 billion per year before dropping to \$90 billion per year, which included \$350 billion of Alt-A securities. Fannie Mae had stopped buying Alt-A products in the early 1990s because of the high risk of default. By 2008, the Fannie Mae and Freddie Mac owned, either directly or through mortgage pools they sponsored, \$5.1 trillion in residential mortgages, about half the total U.S. mortgage market. The GSE have always been highly leveraged, their net worth as of 30 June 2008 being a mere US\$114 billion. When concerns arose in September 2008 regarding the ability of the GSE to make good on their guarantees, the Federal government was forced to place the companies into a conservatorship, effectively nationalizing them at the taxpayers' expense. The Glass-Steagall Act was enacted after the Great Depression. It separated commercial banks and investment banks, in part to avoid potential conflicts of interest between the lending activities of the former and rating activities of the latter. Economist Joseph Stiglitz criticized the repeal of the Act. He called its repeal the "culmination of a \$300 million lobbying effort by the banking and financial services industries...spearheaded in Congress by Senator Phil Gramm." He believes it contributed to this crisis because the risk-taking culture of investment banking dominated the more conservative commercial banking culture, leading to increased levels of risk-taking and leverage during the boom period. The Federal government bailout of thrifts during the savings and loan crisis of the late 1980s may have encouraged other lenders to make risky loans, and thus given rise to moral hazard.

- **Financial institution debt levels and incentives-**

Many financial institutions, investment banks in particular, issued large amounts of debt during 2004–2007, and invested the proceeds in mortgage-backed securities (MBS), essentially betting that house prices would continue to rise, and those households would continue to make their mortgage payments. Borrowing at a lower interest rate and investing the proceeds at a higher interest rate is a form of financial leverage. This is analogous to an individual taking out a second

mortgage on his residence to invest in the stock market. This strategy proved profitable during the housing boom, but resulted in large losses when house prices began to decline and mortgages began to default. Beginning in 2007, financial institutions and individual investors holding MBS also suffered significant losses from mortgage payment defaults and the resulting decline in the value of MBS. A 2004 U.S. Securities and Exchange Commission (SEC) decision related to the net capital rule allowed USA investment banks to issue substantially more debt, which was then used to purchase MBS. Over 2004-07, the top five US investment banks each significantly increased their financial leverage (see diagram), which increased their vulnerability to the declining value of MBSs. These five institutions reported over \$4.1 trillion in debt for fiscal year 2007, about 30% of USA nominal GDP for 2007. Further, the percentage of subprime mortgages originated to total originations increased from below 10% in 2001-2003 to between 18-20% from 2004-2006, due in-part to financing from investment banks. During 2008, three of the largest U.S. investment banks either went bankrupt (Lehman Brothers) or were sold at fire sale prices to other banks (Bear Stearns and Merrill Lynch). These failures augmented the instability in the global financial system. The remaining two investment banks, Morgan Stanley and Goldman Sachs, opted to become commercial banks, thereby subjecting themselves to more stringent regulation. In the years leading up to the crisis, the top four U.S. depository banks moved an estimated \$5.2 trillion in assets and liabilities off-balance sheet into special purpose vehicles or other entities in the shadow banking system. This enabled them to essentially bypass existing regulations regarding minimum capital ratios, thereby increasing leverage and profits during the boom but increasing losses during the crisis. New accounting guidance will require them to put some of these assets back onto their books during 2009, which will significantly reduce their capital ratios. One news agency estimated this amount to be between \$500 billion and \$1 trillion. This effect was considered as part of the stress tests performed by the government during 2009.

- **Credit default swaps-**

Credit default swaps (CDS) are financial instruments used as a hedge and protection for debt holders, in particular MBS investors, from the risk of default. As the net worth of banks and other financial institutions deteriorated because of losses related to subprime mortgages, the likelihood increased that those providing the insurance would have to pay their counterparties. This created uncertainty across the system, as investors wondered which companies would be required to pay to cover mortgage defaults. Like all swaps and other financial derivatives, CDS may either be used to hedge risks (specifically, to insure creditors against default) or to profit from speculation. The volume of CDS outstanding increased 100-fold from 1998 to 2008, with estimates of the debt covered by CDS contracts, as of November 2008, ranging from US\$33 to \$47 trillion. CDS are lightly regulated. As of 2008, there was no central clearing house to honor CDS in the event a party to a CDS proved unable to perform his obligations under the CDS contract. Required disclosure of CDS-related obligations has been criticized as inadequate. Insurance companies such as American International Group (AIG), MBIA, and Ambac faced ratings downgrades because widespread mortgage defaults increased their potential exposure to

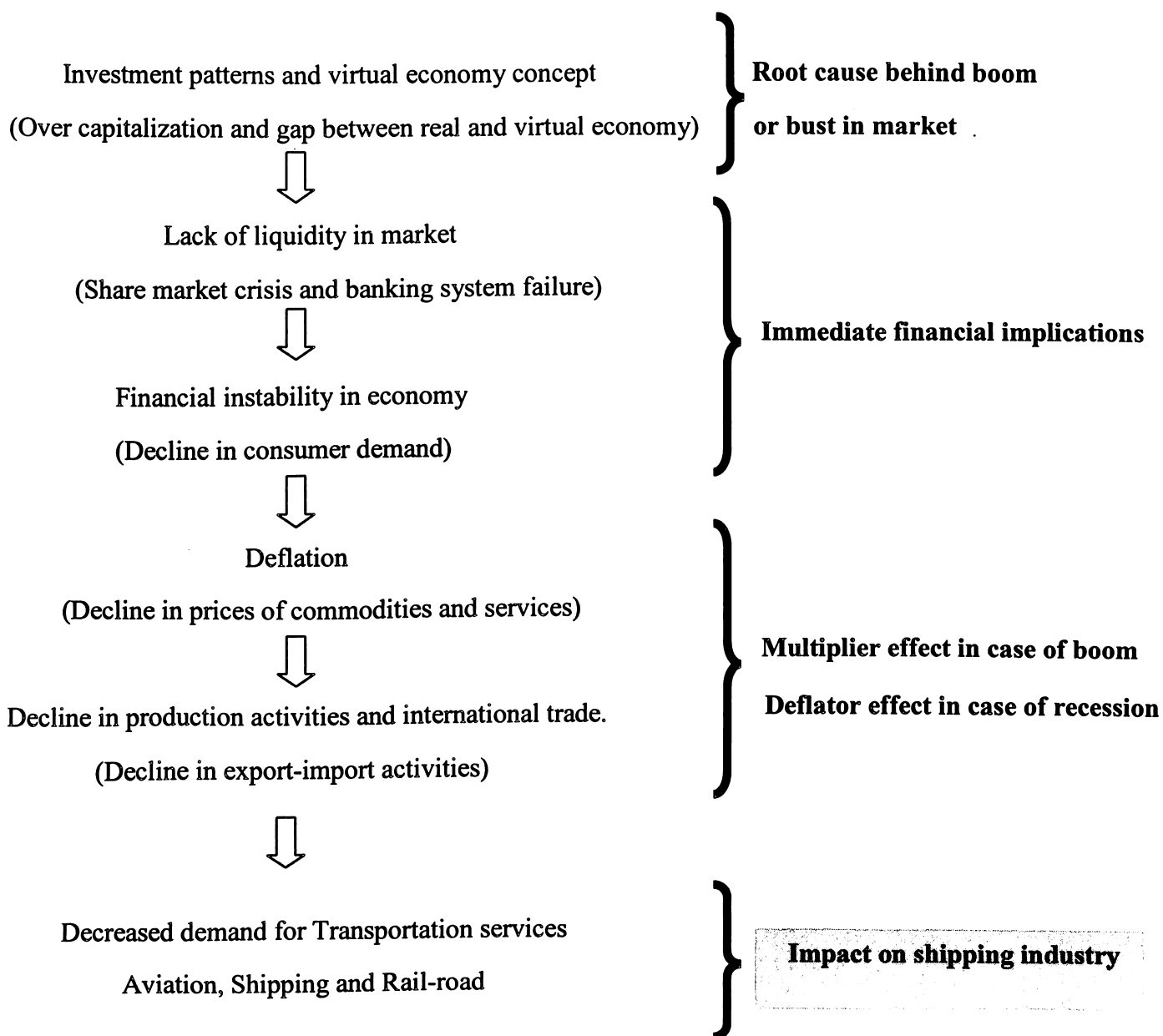
CDS losses. These firms had to obtain additional funds (capital) to offset this exposure. AIG's having CDSs insuring \$440 billion of MBS resulted in its seeking and obtaining a Federal government bailout. Like all swaps and other pure wagers, what one party loses under a CDS, the other party gains; CDSs merely reallocate existing wealth [that is, provided that the paying party can perform]. Hence the question is which side of the CDS will have to pay and will it be able to do so. When investment bank Lehman Brothers went bankrupt in September 2008, there was much uncertainty as to which financial firms would be required to honor the CDS contracts on its \$600 billion of bonds outstanding. Merrill Lynch's large losses in 2008 were attributed in part to the drop in value of its unhedged portfolio of collateralized debt obligations (CDOs) after AIG ceased offering CDS on Merrill's CDOs. The loss of confidence of trading partners in Merrill Lynch's solvency and its ability to refinance its short-term debt led to its acquisition by the Bank of America.

Developing global financial crisis-

Beginning with bankruptcy of Lehman Brothers on Sunday, September 14, 2008, the financial crisis entered an acute phase marked by failures of prominent American and European banks and efforts by the American and European governments to rescue distressed financial institutions, in the United States by passage of the Emergency Economic Stabilization Act of 2008 and in European countries by infusion of capital into major banks. Afterwards, Iceland almost claimed to go bankrupt. Many financial institutions in Europe also faced the liquidity problem that they needed to raise their capital adequacy ratio. As the crisis developed, stock markets fell worldwide, and global financial regulators attempted to coordinate efforts to contain the crisis. The US government threw the \$700 billion plan which was attempted to purchase the outperforming collaterals and assets. However, the plan was vetoed by the US congress because a group of republicans rejected the idea that the tax payer's money is used to bail out the Wall Street's investment bankers. The stock market plunged as a result; the US congress amended the \$700 billion bailout plan and finally passed the legislation. Unfortunately, the market sentiment continuously deteriorated and the global financial system almost collapsed. While the market turned extremely pessimistic, the British government launched a 500 billion pounds bailout plan aimed to injecting capital into the financial system. The British government nationalized most of the financial institutions in trouble. Many European governments followed as well as the US government. The market has recently stabilized. In addition, the falling prices due to reduced demand for oil, coupled with projections of a global recession, brought the 2000s energy crisis to Temporary resolution. As the financial panic developed during September and October, 2008 there was a "flight to quality"²⁵ as investors sought safety in U.S. treasury bonds, gold, and strong currencies such as the dollar and the yen. This currency crisis threatened to disrupt international trade and produced strong pressure on all world currencies. The International Monetary Fund had limited resources relative to the needs of the many nations with currency under pressure or near collapse.

Dependability of shipping market on World economy

(Figure-5)



MARKET MECHANISM OF SHIPPING INDUSTRY-

Shipping industry is a group of industries. When we talk about shipping a number of industries are involved in it and these industries together make an interrelated combination of industry called as maritime industry. For the purpose of definition we can isolate these industries in following categories.

- Liner shipping
- Bulk shipping
- Tanker market
- Shipbuilding
- Charter market

The pattern of seaborne trade and shipping is determined by a multitude of factors, economic, geographic and political. Nations trade in order to increase their wealth. The role of international transport is to bridge the spatial separation of trading countries. Shipping is by far the most important mode of transport of international trade. In terms of weight something like 90% of all international trade moves by sea, and so far as long-distance trade is concerned virtually all is seaborne. Due to the fact that the average transport distance is much longer in international than in international trade, the total transport work in ton-miles performed by shipping dominates over the transport work made by all other modes of freight transport. According to one estimate the total ton-miles by sea are more than twice the total ton-miles by road, railway, and air, put together.

Shipping market demand-

As shipping is the most economic way of international transportation of goods the world economy and shipping economy are highly correlated. The world economy generates the basic demand for sea transport which may be modified by the developments in particular commodities such as- rise in oil prices which influences oil demand. The five major factors that affect shipping demand are as following-

- World economy
- Seaborne commodities trade
- Average haul
- Transport costs
- Political events

Demand of shipping is measured in ton miles of transportation service required which is determined by the tonnage of cargo to be moved and the average distance over each ton of cargo is moved.

Shipping market supply –

Supply of shipping services is a complex task to measure as shipping is influenced by a number of factors supplying shipping service according to demand is determined by five factors which are following-

- World fleet
- Shipbuilding output
- Scraping & losses
- Fleet performance
- Operating environment

World fleet represent the fixed stock of shipping capacity and this can be expanded by the output of shipbuilding industry and can be reduced by scrapping of stock ,here stock is the vessels in operations .However the amount of transport provided by a fleet depends upon the manner in which the ships are operated .

DEMAND SUPPLY EQUATION-

$$DD_t = f(CT_t, AH_t) \quad \text{DEMAND FUNCTION}$$

$$SS_t = f(MF_t, P_t) \quad \text{SUPPLY FUNCTION}$$

$$\text{EQUILIBRIUM} = SS_{tm}(FR_{tm}) = DD_{tm}(FR_{tm})$$

Where-

DD = DEMAND FOR SEABORNE TRADE

SS = SUPPLY OF SEABORNE TRADE

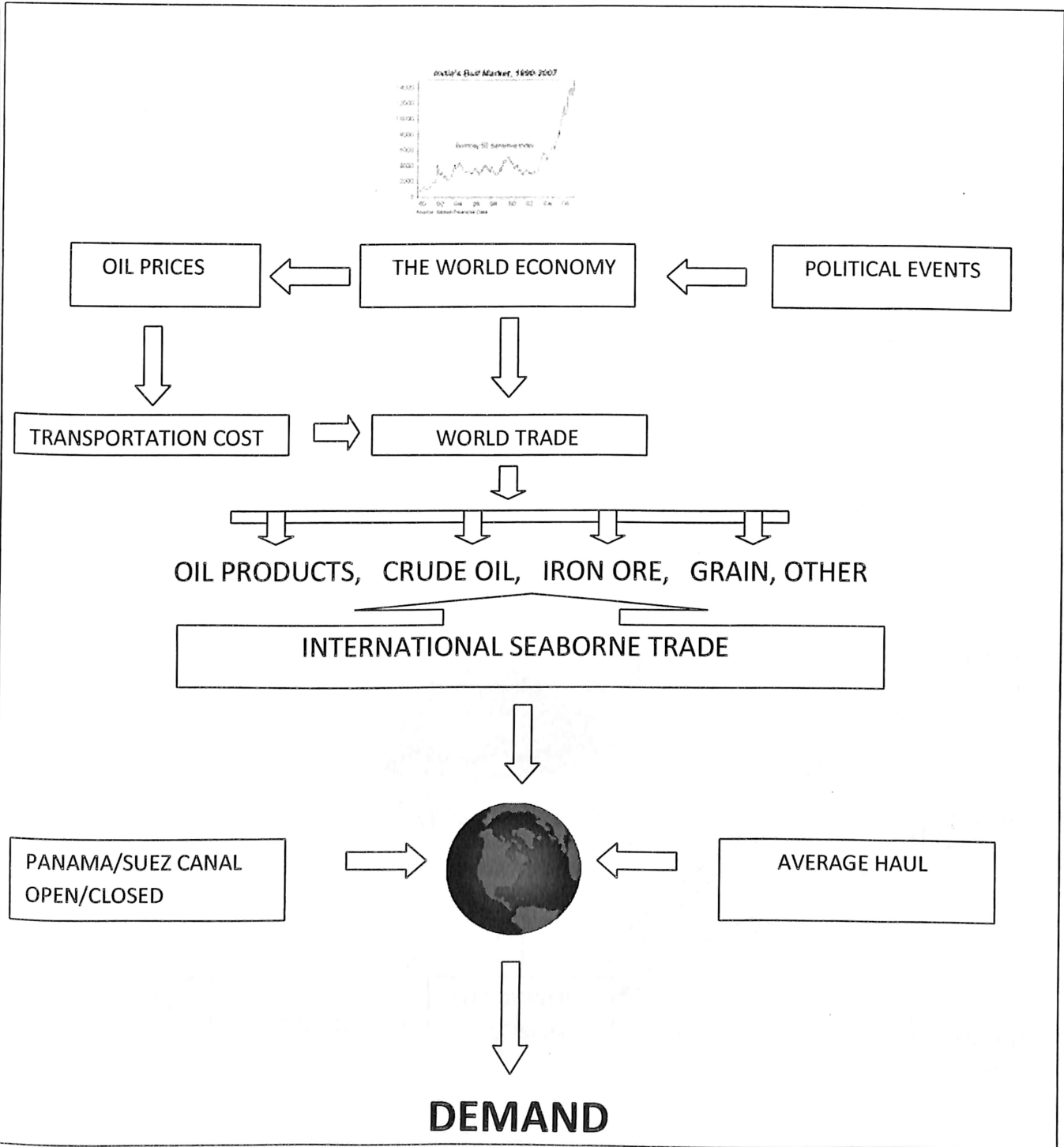
CT = TONNES OF CARGO TRANSPORTED IN TIME

AH = AVERAGE HAUL

MF = MERCHANT FLEET, F= FRIEGHT RATE

P = SHIP PRODUCTIVITY

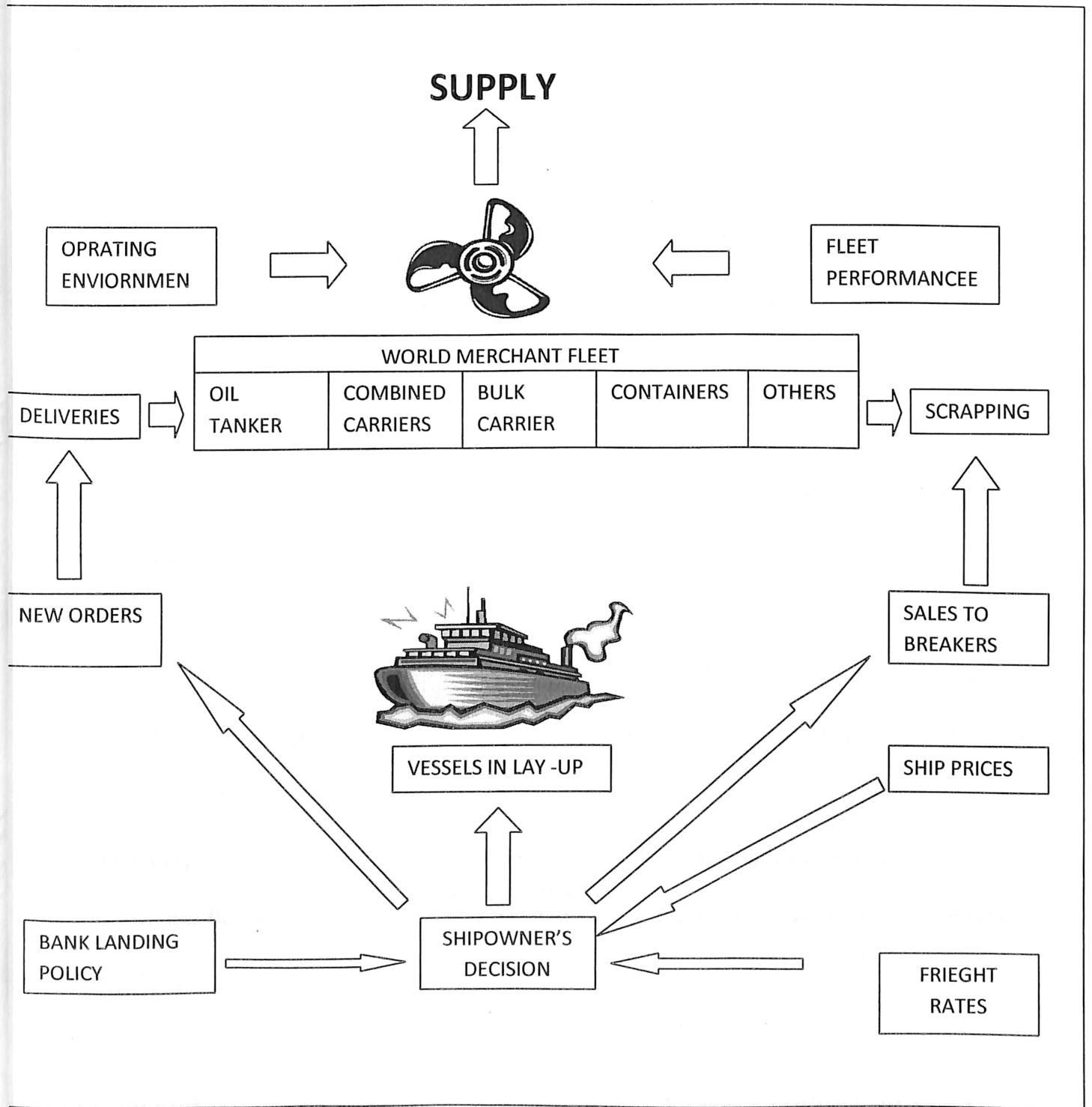
DEMAND MODEL



SHIPPING DEMAND MODEL

(Figure-6)

SUPPLY MODEL

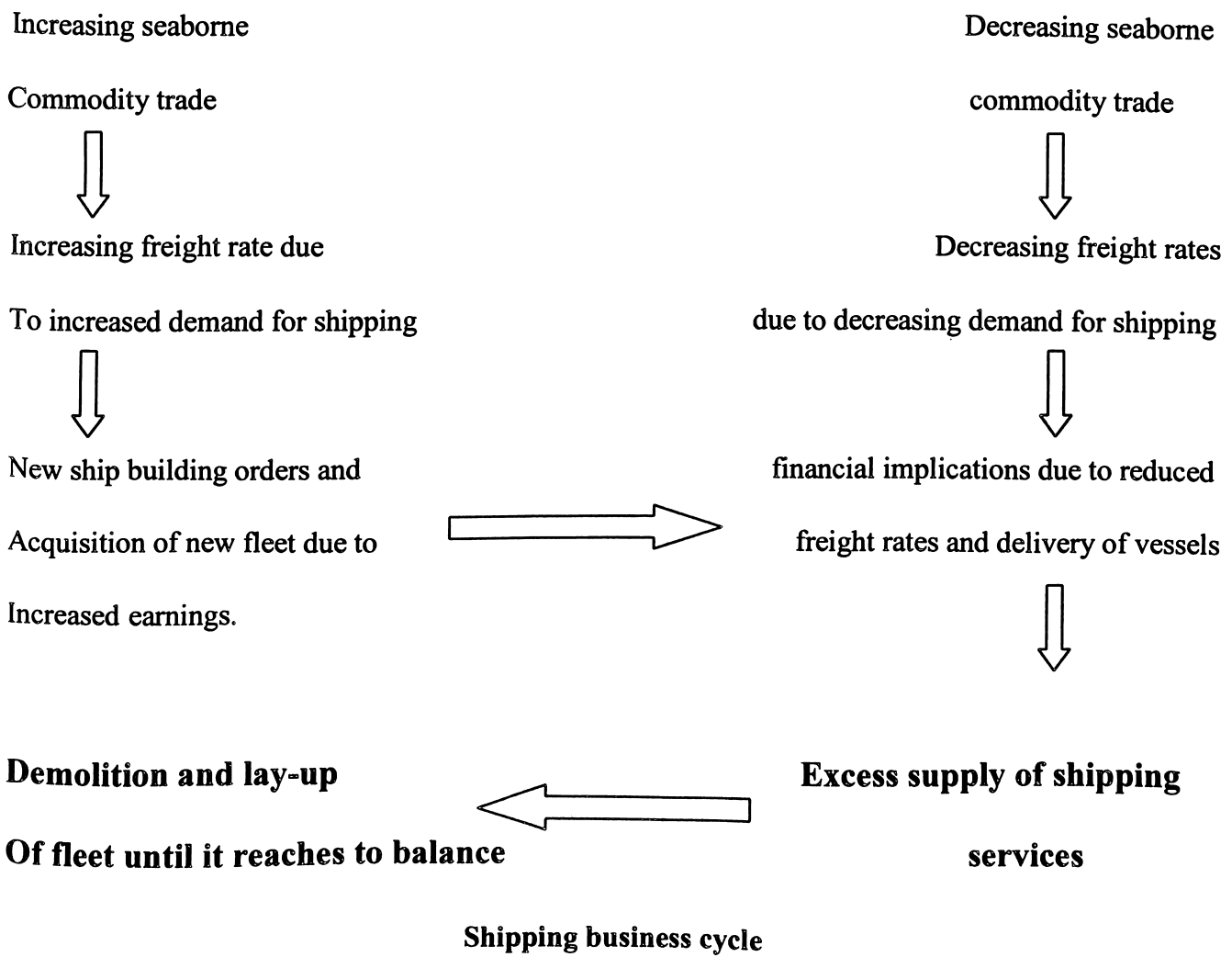


SHIPPING SUPPLY MODEL

(Figure-7)

Business cycles in shipping industry-

Demand for the shipping services is a derived demand of world seaborne commodity trade, and in good economic conditions shipping industry enjoys massive profit making due to increased freight rates and on other hand in depressed market conditions industry faces tough time to keep its fleet operational. Starting with a growing economy and a depressed shipping market, freight rates rise with an increase in transport demand. Rising freight rates increase the earnings of ship owners who respond to a more favorable investment climate by bidding up the price of second hand ships and by ordering new ships. The order book builds until the rates crest. At the peak there is a slowing of economic growth and freight rates decline. The delivery of vessels into a falling market helps to depress rates further. Low freight rates discourage ordering and encourage lay-up and demolition of ships. Eventually the excess supply reduces until it approaches a balance with demand. Then the cycle is ready to begin again. An entire regular cycle of this type might take about three to four years from through to through.



(Figure-8)

WORLD FOREIGN TRADE GROWTH PATTERN-

The collapse in demand has significantly impacted growth in world merchandise trade. In 2008, the volume of world merchandise exports grew by 2.0 per cent, four percentage points lower than 2007 (table 2). The magnitude of this deceleration is such that, unlike previous years, growth in export volumes did not outpace growth in global output trade has successfully grown at a faster rate than GDP, with trade expanding two to three times faster. The multiplier effect is, to a large extent, the result of globalized production processes and trade in parts and components, greater economic integration, and the deepening and widening of global supply chains. According to (WTO) World Trade organization monthly trade volumes of major developed and developing economies have been falling in tandem since September 2008. The global down turn that started in late 2008 is considered particularly severe, with recorded declines in trade being larger than in past slowdowns.

(Table-3)
World trade growth by volume 2006-2008
(Percent)

EXPORTS			COUNTRIES/REGIONS	IMPORTS		
YEAR	YEAR	YEAR		YEAR	YEAR	YEAR
2006	2007	2008		2006	2007	2008
8.5	6.0	2.0	World	8.0	6.0	2.0
8.5	5.0	1.5	North America	6.0	2.0	-2.5
7.5	3.0	0.0	European Union	7.0	3.5	-1.0
1.5	4.0	3.0	Africa	10.0	14.0	13.0
3.0	4.0	3.0	Middle East	5.5	14.0	10.0
4.0	3.0	1.5	South and Central America	15.0	17.5	15.5
13.5	11.5	4.5	Asia	8.5	8.0	4.0
22.0	19.5	8.0	China	16.5	13.5	4.0
6.0	7.5	6.0	Commonwealth countries	20.5	15.0	20.0

Source-

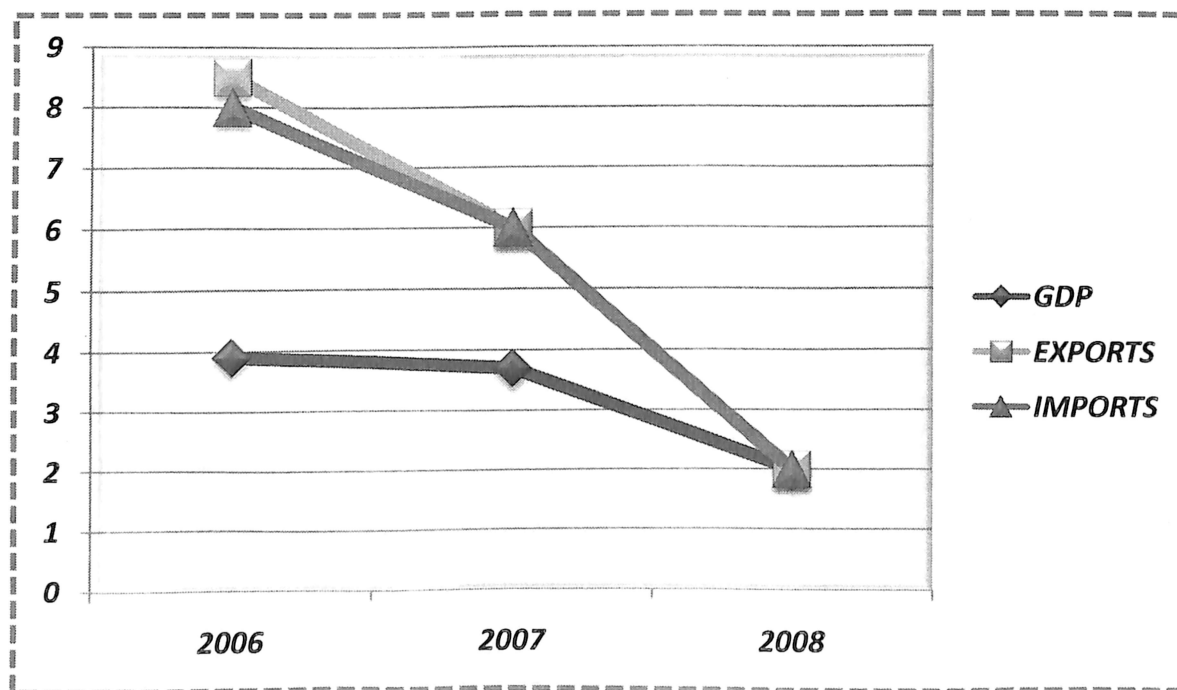
World trade press release: World trade 2008 prospects for 2009. March 2009

As published in "Review of maritime transport" 2009 by UNCTAD (United Nations Conference on trade and Development)

Developing economies and transition economies continued to drive growth in world merchandise trade, Albeit in a slower pace than 2007. Asia led by China – expanded its export volumes by 4.5 per cent, a dramatic fall from the double-digit rate recorded in previous years. Growth in export volumes from China slowed to 8.5 per cent, less than half the growth rate Recorded in 2007. Asia’s import and those of China in particular – also grew at a slower pace than in 2007. Asia’s openness to trade has made it more vulnerable to the recession, especially those countries that rely heavily on the production and export of manufactured goods, the demand for which has substantially dropped. Other developing regions in Africa and Middle East expanded their export and import volumes despite the relatively slower pace. Africa’s export volume grew by 3.0 per cent in 2008, compared to 4.5 per cent in 2007, compared to 3.0 percent in 2007 while import expanded by 13.0 percent .Similarly export volume of Middle East grew by 3.0 per cent (4.0 per cent in 2007), while imports grew by 10.0 per cent (14.0 per cent in 2007). Import volumes in Latin America expanded faster than in any other region they increased at a double-digit rate (15.5 per cent), although at a slower pace than in 2007.

(Figure-9)

**Relation in growth of World GDP, and World foreign trade
(Percentage)**



Source-

World trade press release: World trade 2008 prospects for 2009. March 2009

As published in “Review of maritime transport” 2009 by UNCTAD (United Nations Conference on trade and Development)

CHAPTER-3

WORLD SEABORNE COMMODITY TRADE-

Following the global economic downturn and sharp decline in world merchandise trade in the last quarter of 2008, growth in international seaborne trade continued, albeit at the slower rate of 3.6 per cent in 2008 as compared to 4.5 percent in 2007. UNCTAD estimated the the 2008 international seaborne trade at 8.17 billion tons of goods loaded, with dry cargo continuing to account for the largest share (66.3 per cent) .Consistent with the past trend, major loading areas were located in developing regions (60.6 per cent), followed by developed economies (33.6 per cent) and countries With transition economies (5.9) percent).Asia continued to dominate the picture, with a share of 40 per cent of total goods loaded, followed in descending order by the Americas ,Europe, Africa and Oceania. Developed economies have consistently increased their share of global goods unloaded. Over the years, developing economies have increased their share of imports – including finished consumer goods, and also parts and components used as inputs in globalized production processes. Reflecting a sharp decline in demand of for consumption goods, as well as a fall in industrial production in major economies and reduced energy demand, especially in developed regions, the deceleration in seaborne volumes affected all shipping sectors.

(Table-4)

Development of international seaborne commodity trade –selected years

(Millions of tons loaded)

YEAR	OIL	MAIN BULKS	OTHER DRY CARGO	TOTAL(ALL CARGOES)
<i>1970</i>	1442	448	676	2566
<i>1980</i>	1871	796	1037	3704
<i>1990</i>	1755	968	1285	4008
<i>2000</i>	2163	1288	2533	5984
<i>2006</i>	2648	1888	3009	7545
<i>2007</i>	2705	2013	3164	7882
<i>2008</i>	2749	2097	3322	8168

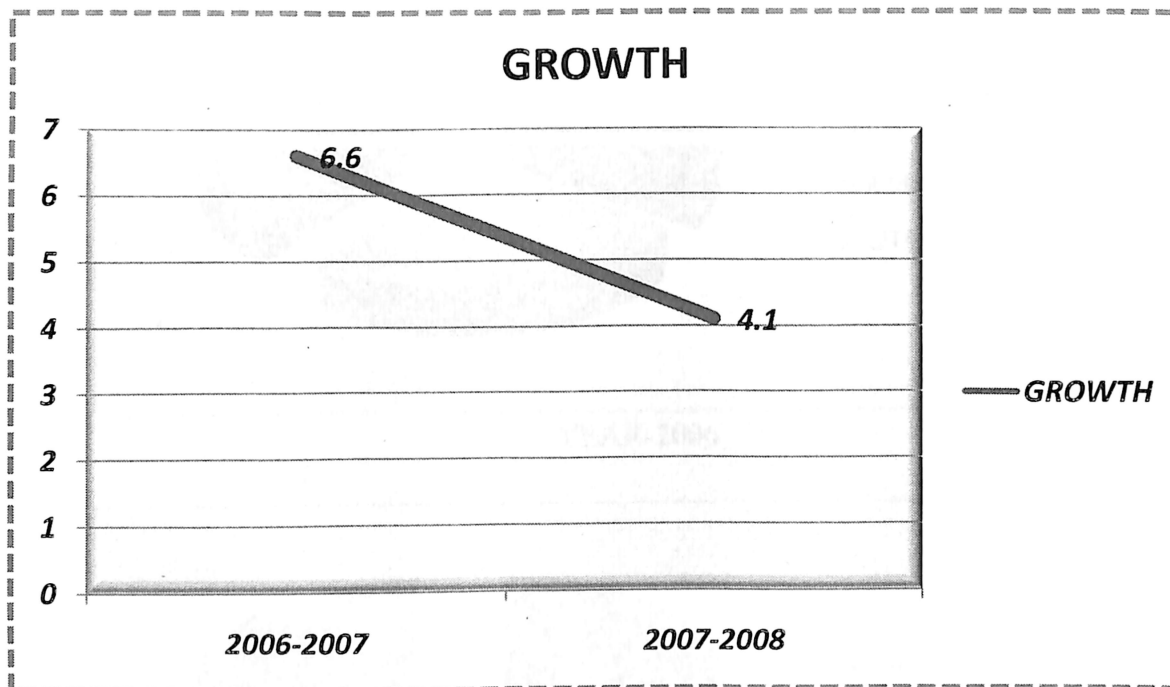
Source-

As published in “*Review of maritime transport*” 2009 by UNCTAD (United Nations Conference on trade and Development)

Main bulks: Iron ore, bauxite/Alumina. Coal, Grain and Phosphate.

(Figure-10)

Growth of dry bulk commodities trade during declining economic conditions
(Percent change)



Source-

As published in "Review of maritime transport" 2009 by UNCTAD (United Nations Conference on trade and Development)

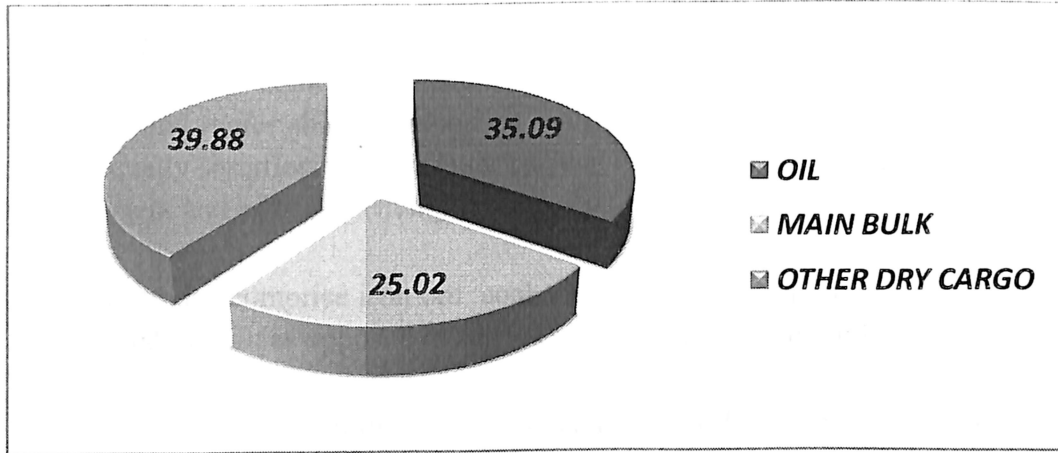
Main bulks: Iron ore, bauxite/Alumina. Coal, Grain and Phosphate

INFERENCE-

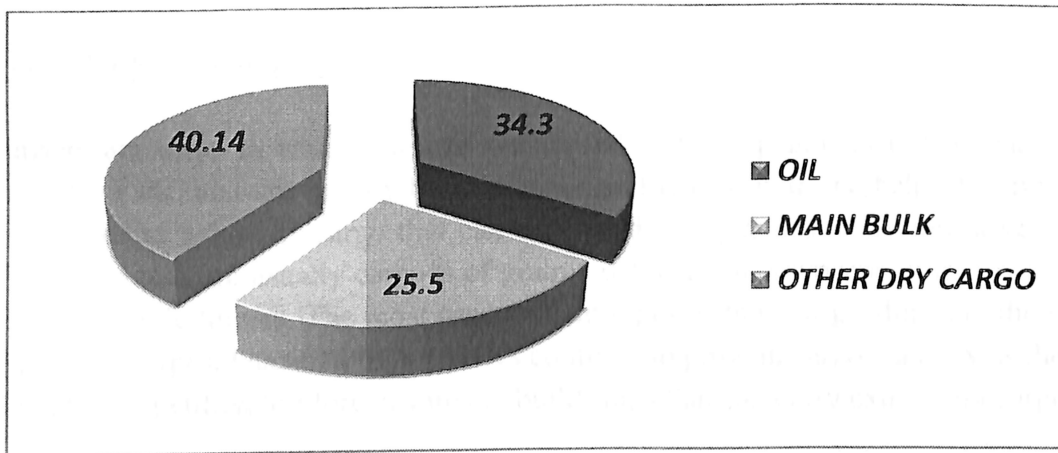
The clear effect of global economic down turn can be seen in above chart ,the growth of dry bulk seaborne commodity trade in year 2007-2008 has shown a slower pace in comparison to previous year. In defining the above category of dry bulk shipping five main bulk commodities (Iron ore, Bauxite/Alumina, Coal, Grain and Phosphate) is taken into account .Some challenging time lies ahead for shipping industry and international seaborne trade. Forecasts for seaborne trade have been marked downwards, with dry bulk – the mainstay of the boom experienced over the past few years – projected to fall sharply. Experts at Fernley's, a leading shipbroker, expect world seaborne trade to fall by 1.4 per cent in 2009, before turning around and growing at a slower rate of 2.0 percent in 2010.

(Figure-11)

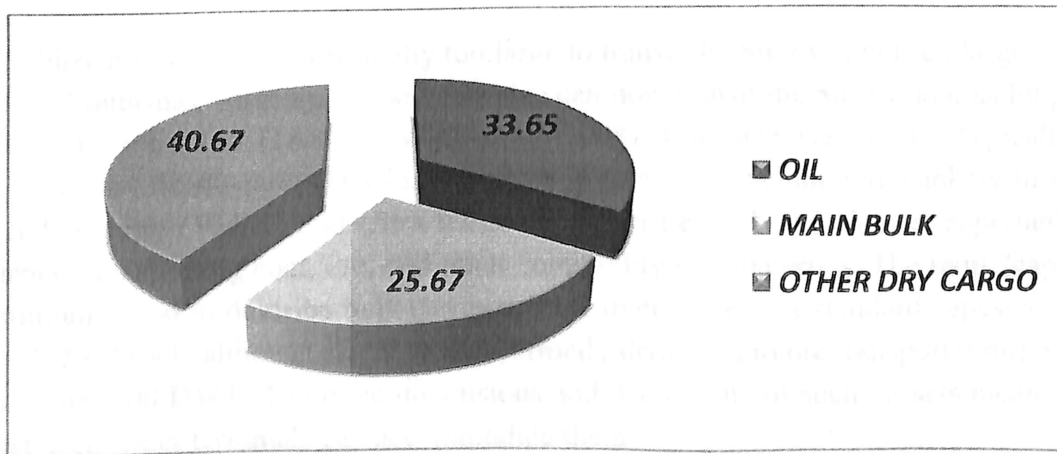
Share of main dry bulk commodities in total seaborne commodity trade



YEAR-2006



YEAR-2007



YEAR-2008

MARKET MECHANISM OF DRY BULK SHIPPING INDUSTRY-

Bulk carriers are those ships that carry unpackaged commodities such as coal, ore or cereals. Part of the reason for their success is because they are exposed to the resources cycle: more coal or iron ore being mined in places like Australia and demanded in places like China obviously requires more dry bulkers to carry it all. Other types of ships play their part and gas carriers bringing the energy for homes and cars; Container-ships crossing the world's oceans with consumer goods and reefer ships transporting fruit and meat for the world's consumers. Other ships play an equally significant role in Bulk carriers carry the equivalent of over year and are an immensely efficient and environmentally friendly means of transport.

- Dry bulk trades comprise iron ore, coal, grain, timber, steel and other similar cargoes which are shipped in bulk as opposed to carried in containers or other unit loads.
- Delivering these commodities every day requires an efficient dry cargo shipping industry. Dry bulk shipping refers to the movement of significant commodities carried in bulk.

TYPE OF BULK CARRIERS-

Bulk carriers are ships in which cargoes are carried in bulk quantities rather than in barrels, containers, bags etc. and are usually homogeneous and loaded with the help of gravity. A bulk cargo is defined as a "loose" cargo that can be loaded easily and directly into a vessel's cargo holds. These cargoes are usually cargoes of grain, coal, cement, soybeans, iron ore, steel pellets and in some cases fertilizers. The most predominant types of bulk cargo ships are the handymax and the panamax types. Panamax bulk carriers continue to grow in cargo capacity as the pressure of worldwide competition has forced yards to build ships that can carry extra extra cargo.

Capesize ship

Capesize ships are cargo ships originally too large to transit the Suez Canal (i.e., larger than both Panamax and Suezmax vessels). Vessels this size can now transit the Suez Canal as long as they meet the draft restriction (18.91 m/62 ft as of 2008). Capesize vessels are typically above 150,000 long tons deadweight (DWT), and ships in this class include Oil Tankers in the Very Large Crude Carrier (VLCC) and Ultra Large Crude Carrier (ULCC) classes; supertankers and Bulk Carriers transporting coal, ore, and other commodity raw materials. The term "capesize" is most commonly used to describe bulk carriers rather than tankers. A standard capesize bulker is around 175,000 DWT, although larger ships (normally dedicated to ore transportation) have been built, up to 400,000 DWT. The large dimensions and deep drafts of such vessels mean that only the largest deep water terminals can accommodate them.

Panamax ship-

"Panamax ships" are the largest Ships that can pass through Panama Canal. The size is limited by the dimensions of the Lock chambers and the depth of the water in the canal. An increasing number of ships are built to the Panamax limit to carry the maximum amount of cargo through the canal. The increasing prevalence of vessels of the maximum size is a problem for the canal as a Panamax ship is a tight fit that requires precise control of the vessel in the locks, possibly resulting in longer lock time, and requiring that these ships transit in daylight. Because the largest ships travelling in opposite directions cannot pass safely within the Gaillard Cut, the canal effectively operates an alternating one-way system for these ships.

Handysize ship-

Handysize most usually refers to a Dry Bulk Vessel (or, less commonly, to a product Tanker) with deadweight of about 15,000–35,000 tons and there is no well-defined or widely accepted size sector below 15,000 tons. Handysize is numerically the most common size of bulk carrier, with nearly 2000 units in service totaling about 43 million tons. Handysize ships are very flexible because their size allows them to enter smaller ports, and in most cases they are 'geared' - i.e. fitted with cranes - which means that they can load and discharge cargoes at ports which lack cranes or other cargo handling systems. Compared to larger bulk carriers, handysizes carry a wider variety of cargo types. These include steel products, grain, metal ores, phosphate, cement, logs, woodchips and other types of so-called Break Bulk Cargo.

Handymax or supramax ship-

Handymax or Supramax is a Naval Architecture term for a Bulk Carrier typically between 35,000 and 60,000 metric tons Deadweight (DWT). A handymax ship is typically 150–200 m (492–656 ft) in length, though certain bulk terminal restrictions, such as those in Japan, mean that many handymax ships are just less than 190 meters (623 ft) in overall length. Modern handymax designs are typically 52,000-58,000 DWT in size, have five cargo holds, and four cranes of 30 Tones (33.1 ST, 29.5LT) lifting capacity.

Kamsarmax ship-

Kamsarmax a special vessel has been built called "Kamsarmax". This is the biggest size ship able to load at the world's largest bauxite port, Port Kamsar in Equatorial Guinea. A Kamsarmax type bulk carrier is basically an 82,000 dwt Panamax with an increased LOA = 229 m (for Port Kamsar in Equatorial Guinea).

CHAPTER-4

IMPACT OF RECESSION ON MAJOR SECTORS OF DRY BULK SHIPPING INDUSTRY (A DEMAND SIDE ANALYSIS)-

The collapse that started in the fourth quarter of 2008 has been more readily visible in the dry bulk sector. The Baltic Dry Index fell sharply, and average earnings for bulk carriers in October 2008 were 80 per cent lower than their levels in April of same year. The main driver of the slowdown in 2008 and the projected slump of 2009 relate to steel production cuts in all-major steel producing regions. Steel production is a key indicator for the for the bulk shipping market as it determines the demand for raw materials such as iron ore and coal and the need for larger bulkers (e.g. capesize ships). In 2008, China's steel production slowed down as real estate sector in China reached a plateau, and as developers were having difficulties in obtaining finance for new projects. Commodity wise description of bulk shipping industry is as following-

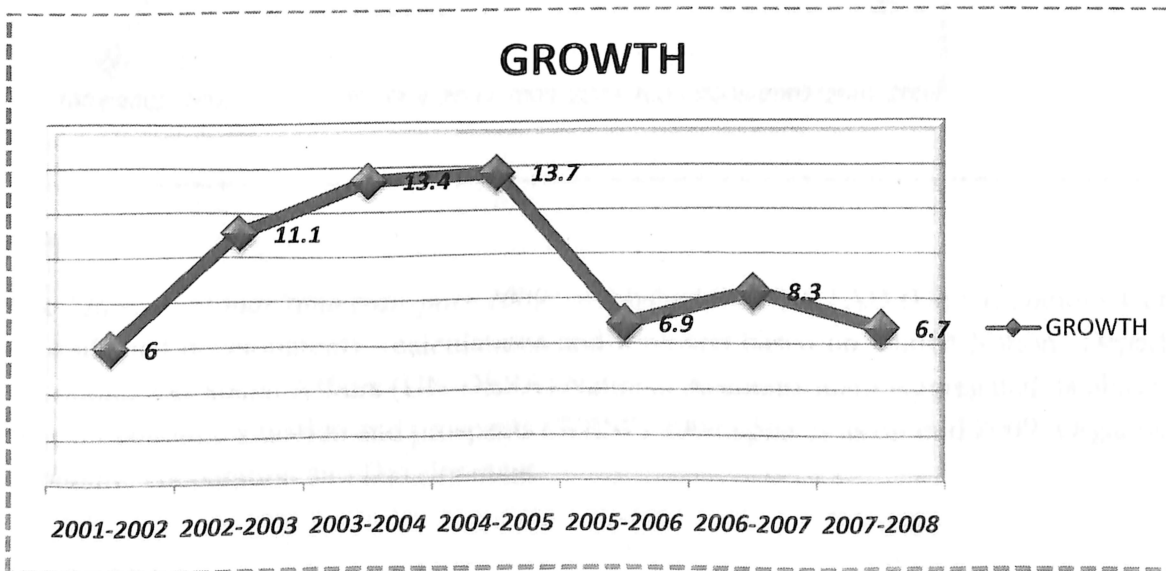
Iron Ore -

Iron ore is widely used metal in areas such as structural engineering, Industrial applications and in automotive sector. The major Iron ore producer's countries include China, India, Brazil, United States, Australia, Canada, Sweden and Russian federation. The iron ore shipment were estimated at 844 million tons in 2008 at increase of 6.7% over 2007. But at a slower pace as compare the growth pattern of previous year 2006-2007 in which the iron ore shipments had registered a growth of more than 8 percent

(Figure-12)

Growth pattern of Iron ore shipment demand (In billion tons miles)

(Percentage growth)



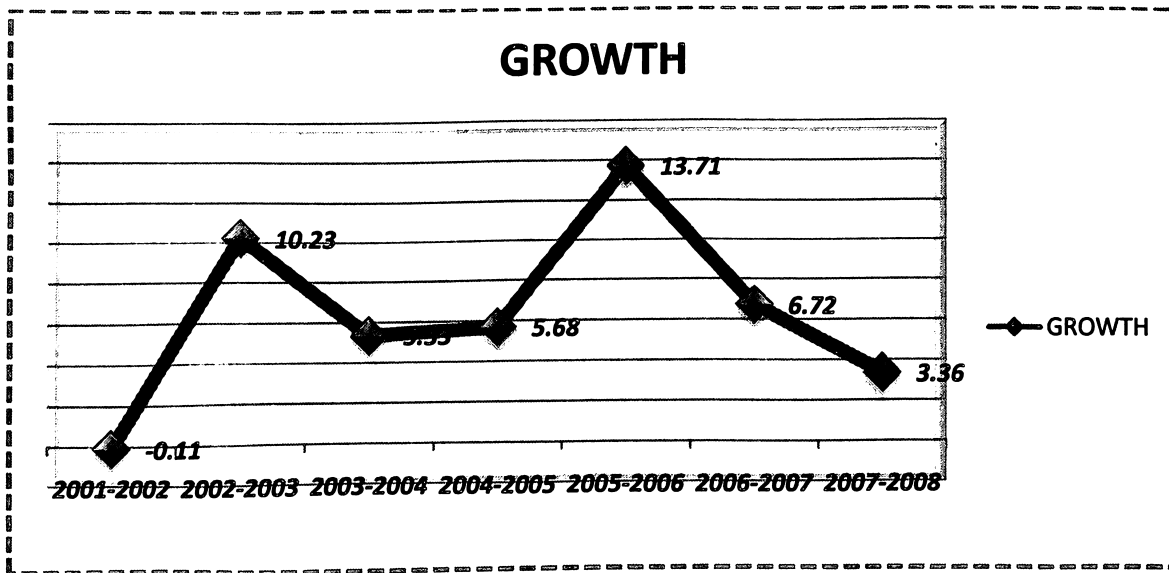
Coal-

Coal is fossil fuel energy source which is much more abundant than oil or gases there are around 130 years of coal remaining worldwide. Different types of coal have different uses .Steam coal also known as thermal coal is mainly used in power generation, Coking coal also known as metallurgical coal is mainly used in steel production. In 2008 world coal production increased by 5.3 percent reaching 3324.9 million with much of global coal production being used in country of production. In 2008 global coal consumption slowed, rising by just 3.1 percent. Nevertheless coal remained the fastest growing fuel for the sixth consecutive year. In 2008 the coal shipments were estimated to reach 814.5 million tons a volume increase of 3.2 % over 2007. Reflecting the adverse effect of the economic difficulties that erupted in the fourth quarter of 2008te. The rate at which the coal shipment volume increased in 2008 was just half of the growth rate of 2007.

(Figure-13)

Growth pattern of coal shipment demand (in billion tons mile)

(Percent change)



Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development.

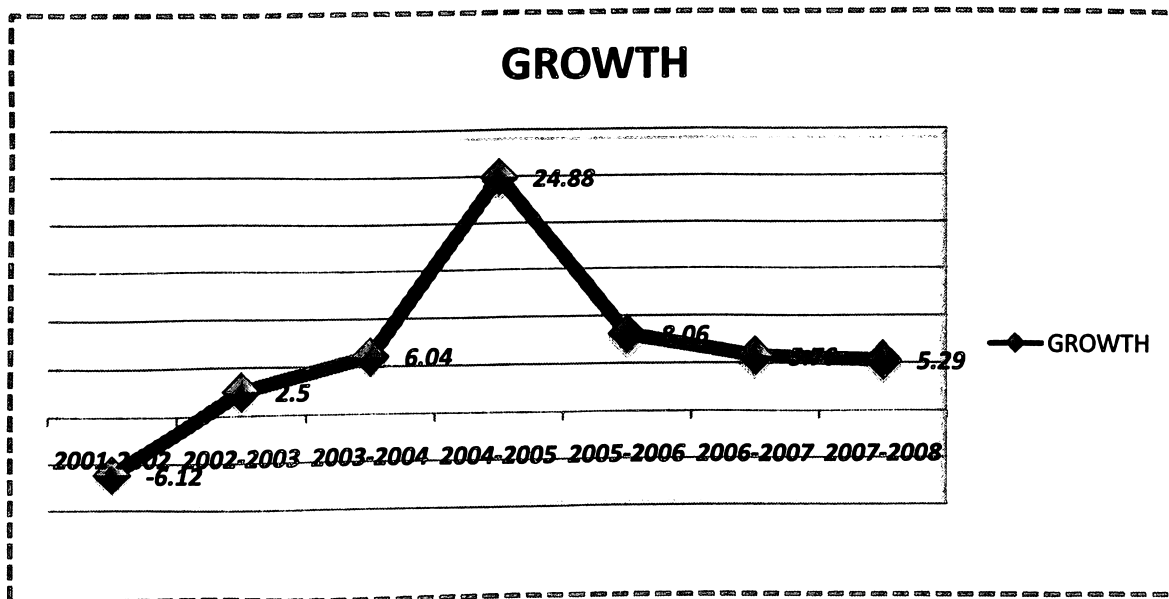
Grains-

According to the International Grain Council the production of grain (Wheat and coarse grain) increased from 1588 million tons to 1697 million tons in 2008. World wheat production increased by 6.5% as farmers increase planted areas in response to favorable prices. A large output was recorded in all exporting areas especially in Australia (+63.3%). In 2008 world shipments of grains were estimated to grow by 5.2 percent reaching 323.3 million tons. In addition to world economic crisis, 2008 witnessed the eruption of a global food crisis which resulted in high and dramatically increasing prices of food grains and considerable shortage of food in many regions of world.

(Figure-14)

Growth pattern of grains shipment demand (in billion tons mile)

(Percent change)



Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development.

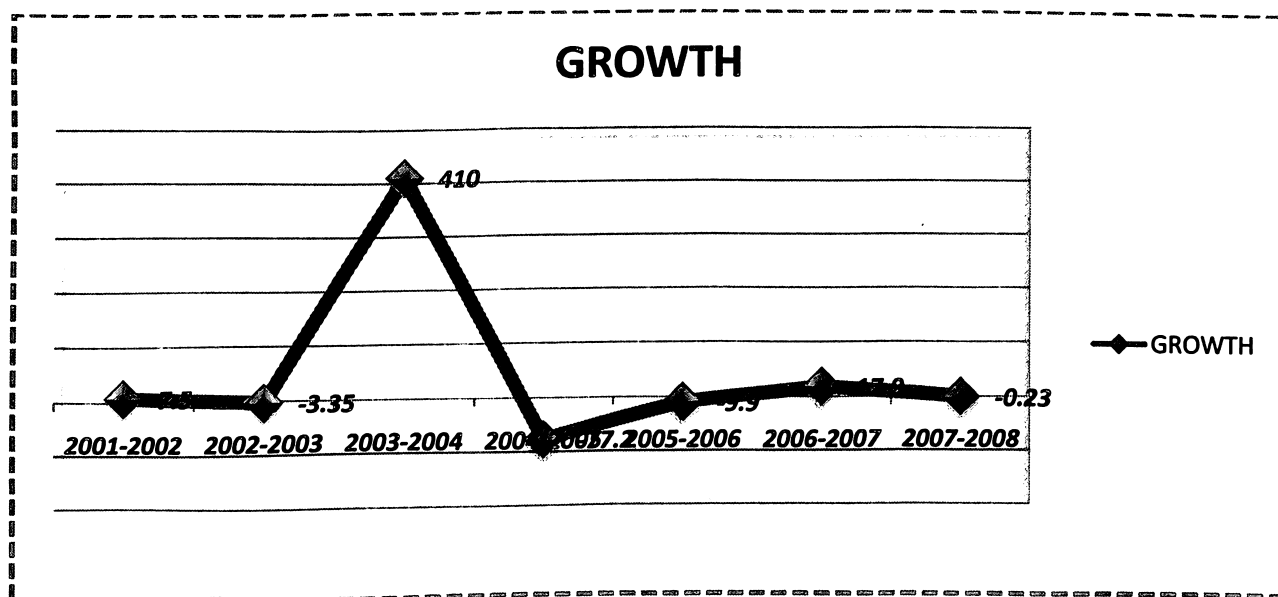
Bauxite/Alumina and Phosphate-

Bauxite resources are available in Africa (33 percent); Oceania (24percent), South America and Caribbean (22 percent), Asia (15 percent).In 2008 shipment volume for Bauxite and Alumina were estimated to 83.5 million tons .The largest sedimentary deposits of Phosphate rock are found in North America, China, the Middle East and the United States. In 2008 world trade of phosphate totaled 32 million tons. The shipment demand for Bauxite, Alumina and phosphate has shown a major decline in 2008 as it has registered a negative growth of 0.23 percent as compared to highly positive growth of 17.9 in year 2007. This segment of dry bulk industry can be regarded as most volatile in demand pattern in which fluctuations ranging from 410% to – 3.35 % has occurred.

(Figure-15)

Growth pattern of bauxite/Alumina and phosphate shipment demand (in billion tons mile)

(Percent change)



Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development

OVERALL DEMAND PATTERN DURING RECESSION-

Demand for maritime services is more adequately expressed in tons mile as this reflects the evolution of both the cargo volumes as well as distance travelled and the geographical distributions of suppliers and buyers. As visible in following figure world seaborne commodity trade demand amounted 32746 billion tons mile in 2008. This represents an increase of 4.2 percent over the previous year 2007.

(Table-5)

World seaborne trade's demand for shipping 2001-2008

(In billion tons mile)

YEAR	OIL	MAIN BULKS	OTHER BULKS	WORLD TOTAL
2001	9419	6782	6930	23131
2002	9898	6879	7395	24172
2003	9850	7118	7810	24778
2004	10340	9521	8335	28196
2005	10527	9119	8730	28376
2006	10741	9976	9341	30058
2007	11084	10676	9665	31425
2008	11292	11209	10245	32746

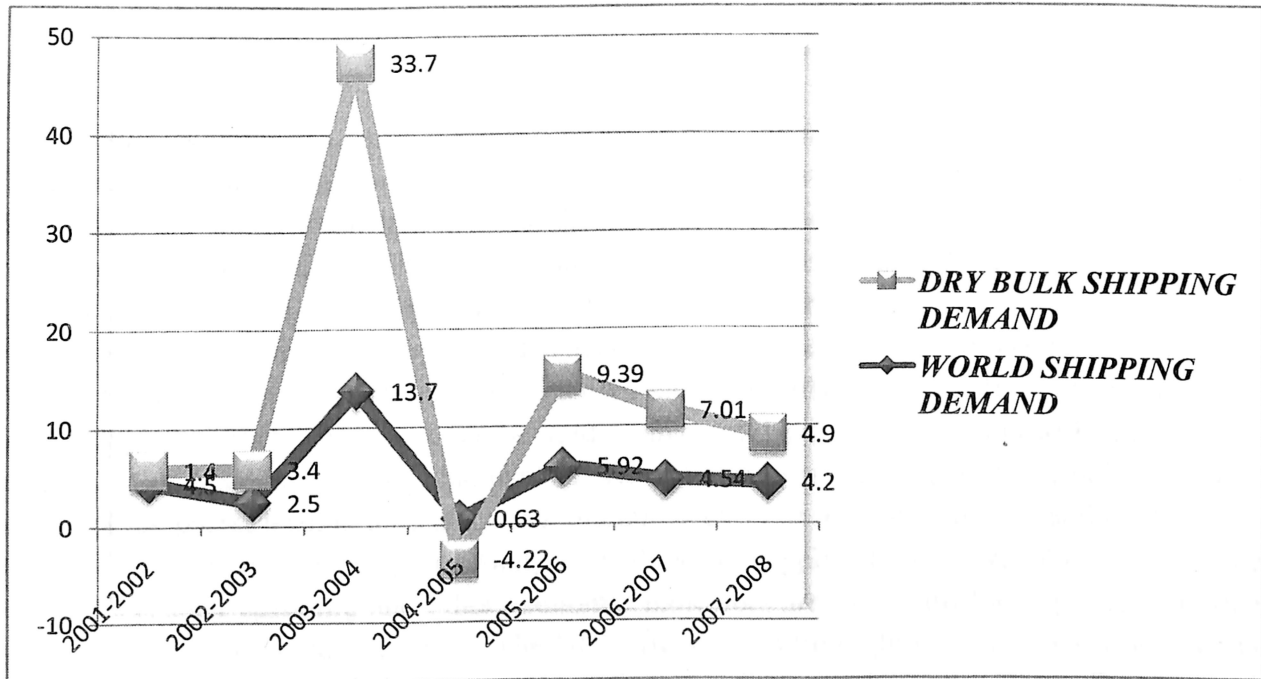
Source-

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(Figure -16)

World Shipping demand and dry bulk shipping demand growth pattern

(Percent change)



Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development

INFERENCE-

Dry bulk segment of shipping can be defined as one the most important segment after oil transportation. Which each peak and bottom in demand of shipping dry bulk sector has reacted accordingly. During difficult economic conditions and declining world seaborne trade the demand for shipping has faced a tough time. Although in overall demand of shipping has not much suffered as it recorded a positive growth of 4.2 percent for 2008 in comparison to 4.5 percent in 2007 but the dry bulk shipping segment has reacted much to recession by recording a mere 4.9 percent growth as compared to 7.01 percent in 2007.

FREIGHT RATE FLUCTUATIONS DURING RECESSION-

A turning point in the fortunes of dry bulk ship owners was reached in 2008 after four years of strong growth the demand for pre Olympic deliveries led to reports of congestion problems in China. Brazil and Australia helped tighten supply and lift freights rates at the start of 2008. In Northern China high stockpiles of iron ore interrupted schedules and resulted in an average delay of 10 days for vessel to berth. The discussion about the dry bulk freight rates requires an outlook of BDI (Baltic dry index) which is as following-

Baltic dry index-

The Baltic Dry Index is a daily average of prices to ship raw materials. It represents the cost paid by an end customer to have a shipping company transport raw materials across seas on the Baltic Exchange, the global marketplace for brokering shipping contracts. The index is quoted every working day at 1300 London time. The Baltic Exchange is a medium for buyers and sellers of contracts and forward agreements (futures) for delivery of dry bulk cargo. The Baltic is owned and operated by the member buyers and sellers. The exchange maintains prices on several routes for different cargoes and then publishes its own index, the BDI, as a summary of the entire dry bulk shipping market. This index can be used as an overall economic indicator as it shows where end prices are heading for items that use the raw materials that are shipped in dry bulk. The BDI is one of the purest leading indicators of economic activity. It measures the demand to move *raw materials* and *precursors* to production, as well as the supply of ships available to move this cargo. Consumer spending and other economic indicators are backward looking, meaning they examine what has already occurred. The BDI offers a real time glimpse at global raw material and infrastructure demand. Unlike stock and commodities markets, the Baltic Dry Index is totally devoid of speculative players. The trading is limited only to the member companies, and the only relevant parties securing contracts are those who have actual cargo to move and those who have the ships to move it.

The index is maintained by the Baltic Exchange. The cargoes being moved are raw material commodities such as coal, steel, cement, and iron ore. The prices of underlying contracts are determined by the buyers and sellers, and then the exchange takes 20 different routes throughout the world for various materials and averages them into one index. The index does not concern itself with finished goods or container ships, only raw materials and dry bulk specific ships are factored into the calculation .It also factors in all four sizes of oceangoing dry bulk transport vessels:

- Capsize
- Handymax
- Panamax
- Supramax

(Table-6)

Baltic dry cargo freight indices 2006-2009

(For time charter January to May)

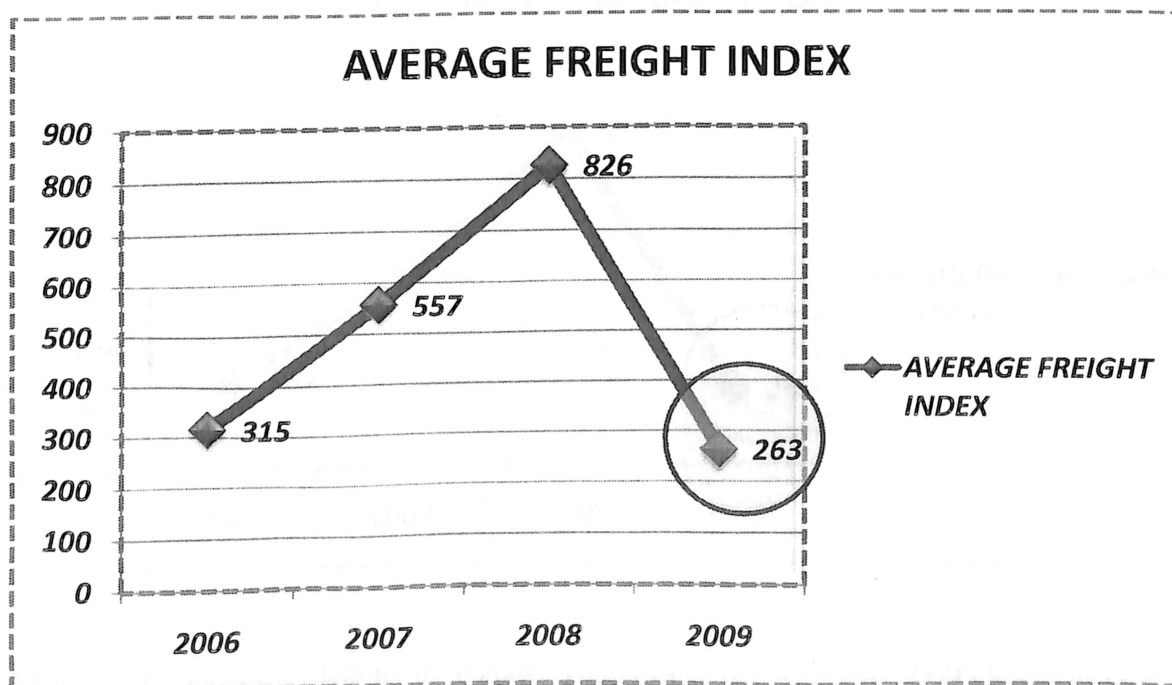
PERIOD	DRY CARGO TRAMP TIME CHARTER INDICES			
--------	--------------------------------------	--	--	--

YEAR	2006	2007	2008	2009
<i>January</i>	302	491	812	193
<i>February</i>	298	480	657	259
<i>March</i>	327	550	810	305
<i>April</i>	326	576	795	254
<i>May</i>	323	671	1055	306
<i>5 months average</i>	315	557	826	263

(Figure-17)

Average freight index January to May (2006-2009)

(For time charter)



Source- Baltic dry index as published in Review of maritime transport 2009 (UNCTAD)

(Table-7)

Baltic dry cargo freight indices 2006-2009

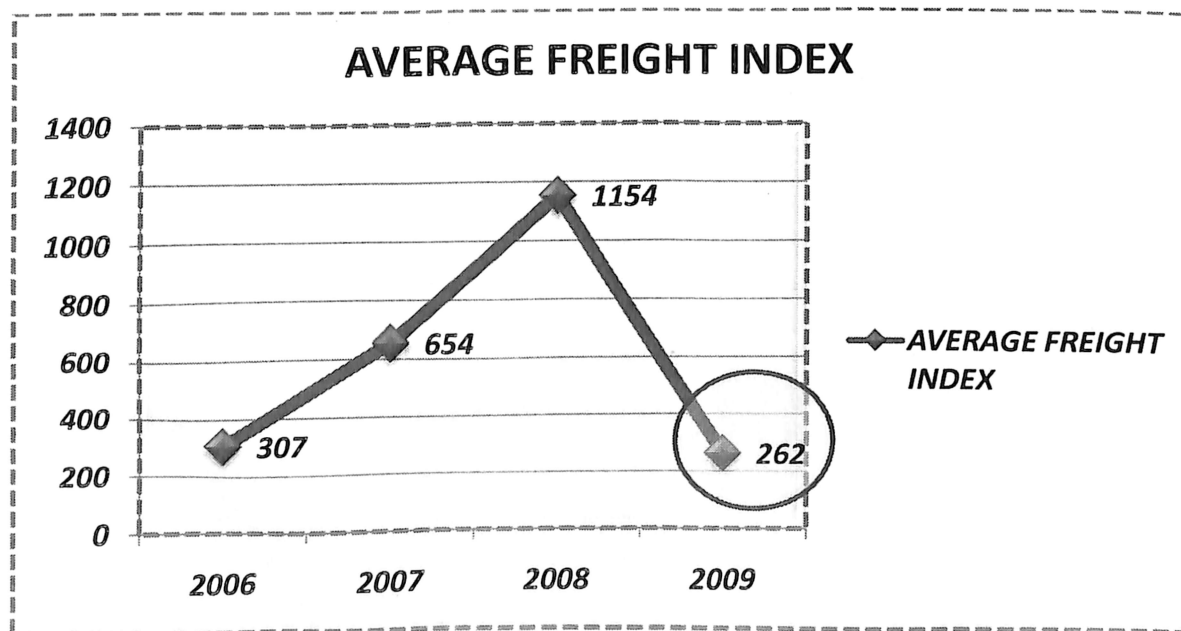
(For voyage charter January to May)

PERIOD	DRY CARGO TRAMP TIME CHARTER INDICES			
	2006	2007	2008	2009
YEAR				
January	294	632	1018	154
February	292	577	908	227
March	321	644	1221	296
April	325	707	1080	277
May	304	712	1544	358
5 months average	307	654	1154	262

(Figure-18)

Average freight index January to May (2006-2009)

(For voyage charter)



INFERENCE- The deep decline in average freight rates in starting of 2009 clearly indicates the consequences created for dry bulk shipping industry by recession. In both type of contract arrangements time and voyage freight have drastically declined to minimum.

CHAPTER-5

WORLD FLEET STRUCTURE AND ITS GROWTH PATTERN (A SUPPLY SIDE ANALYSIS IN REGARD TO RECESSION)-

At beginning of 2009, the world fleet reached to 1.19 billion dead weight tonnages (dwt), a year growth of 6.7 percent compared to January 2007. This growth was the result of vessels orders placed before the financial crisis, when the industry was still expecting continuing high growth rates in demand which did not materialized. As the world's shipping capacity continues to increase even during the economic downturn. As delivery of vessels takes some months or in some cases few years the orders which were placed before the economic crisis stated getting delivered at the time of economic slowdown that created a tonnage surplus or in simple words over supply of shipping services.

(Table-8)

World fleet size by principal types of vessels, 2008-2009

(Beginning of the year figure, Thousands of DWT)

PRINCIPAL TYPES	2008	2009
Oil tankers	407881	418266
Bulk carriers	391127	418356
General cargo ships	105492	108881
Container vessels	144655	161919
Other types	68624	84895
LNG carriers	30013	36341
Chemical tankers	8236	8141
Offshore supply	20687	22567
Ferries and passenger ships	5948	6083
Other (NA)	3740	11762
TOTAL	1117779	1192317

Source-

The "Review of maritime transport 2009" published by UNCTAD (United Nations Conference on trade and development) calculations and forecasts based on United Nations Department of Economic and Social Affairs (UN-DESA), National Accounts main Aggregated database, and the World Economic situation and prospects (WESP) 2009, updates as on mid 2009; Organization for Economic cooperation and Development

(Table-9)

Tonnage oversupply in the world fleet 2004-2009

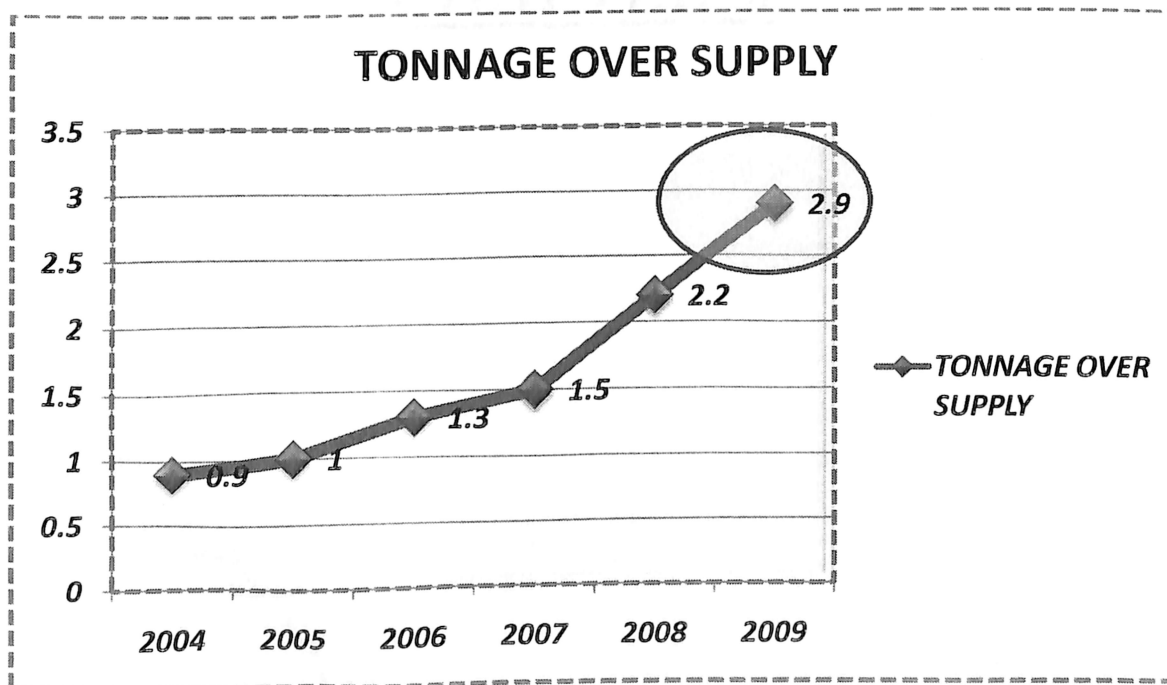
(In million DWTs)

YEAR	2004	2005	2006	2007	2008	2009
World fleet of three main types of vessels	667.0	697.9	773.9	830.7	876.2	896.2
Surplus tonnage	6.2	7.2	10.1	12.1	19.0	25.9
Active fleet	660.8	690.7	763.7	818.6	857.2	870.4

(Figure-19)

Over supply of tonnage in world fleet 2004-2009

(As a percentage of world fleet)



INFERENCE-

The combined surplus tonnage of oil tankers, dry bulk carriers and general cargo ships at end of 2008 stood at 19.0 million dwt, 2.2 percent of world fleet corresponding to a 57 percent increase over the previous year. During the first months of 2009 situation continued to worsen, reaching 25.9 million dwt as surplus on April 2009 corresponding to a 2.9 percent surplus.

CHAPTER-6

STRATEGIES OF SHIPPING PLAYERS TO SERVE IN RECESSION-

Despite economic recession, the fundamentals of the dry bulk industry remain attractive with demand for dry bulk commodities continue to be positive. The primary driver for the dry bulk shipping industry continues to be sustained demand in East Asia led by strong demand for commodities in China and increasingly India. Further with high growth of Indian economy and scarcity of its natural resources, India is likely to continue its demand for dry bulk commodities. In analysis of demand and supply of shipping in recession phase of world economy we can conclude three major consequences to be faced by shipping players-

- Declining demand for shipping services
- Over supply of tonnage
- Declining freight rates creating severe financial implications

Several developing and transition economies which were dreaming for strong economic development suffered by economic downturn but the impact on developing and transition economies was not as severe as on developed economies. As in the beginning of this study the cause behind this was explained in terms of dependability of nations on their real and virtual economy. Developing economies such as India and China benefited by their reliance on real economy. Shipping players have adopted following strategies in order to cope up with recession.

Demolition of ship-

Although the economic crisis led to a plummeting of demand of steels and therefore also a slump in prices for old ships the sale of tonnage for demolition still increase dramatically. The oversupply of tonnage was such that ship owners started selling their old tonnage for scrapping even at lower prices. During the last three months of 2008, 181 vessels were reported to have left the market for demolition. The cumulative total for demolition permitted for recycling was reported more than 1.7 million tons of metal. To cope with the financial implications created by declining freight rates and higher prices of new building ship owners started demolition their older fleet. During the first four months of 2009, 339 ships were reported for demolition. This was much higher in comparison with the 487 vessels reported for whole 2008. In terms of dead weight tonnage terms more was scrapped in four months to April 2009 than in any of the three years between 2005 to 2007. As the new deliveries were getting placed in tough time of economic situations only way to maintain market balance between supply and demand of shipping services was to demolish the older fleet. Although the peak of starting 2007 had brought the new building prices at a historical level ship owners showed a deep business interest in demolition of their older fleet even at much lower rate in history in terms of market value of money.

Termination and rescheduling of orders-

Since the beginning of economic crisis numerous orders at world's shipyards have been cancelled. Ship owners started negotiating for existing orders. Ship owners started wishing the delays in deliveries of new building ship owners interest was to getting their new deliveries.

Withholding the new orders-

In response to declining demand major shipping players started withholding the plans of fleet development. In March 2009 only 13 new orders were recorded worldwide it was a further reduction of 37 new orders in January. The annual average contracts for the year 2009 was estimated at only 252 contracts which was 96 percent below the peak of new orders in July 2007. In particular for dry bulk carriers the number of orders was at their lowest level since 2000.

Slow steaming and other forms of reducing effective supply-

The only to maintain supply-demand balance and getting freight rates on their normal level was to reduce the oversupply of shipping tonnage. Ship owners tried to look on each aspect on this regard and one of the most important strategies was to slow the steaming of fleet. Reducing the service speed of ships has two positive impacts. Firstly it helps to reduce emissions of green house gases and secondly it absorbs some the existing shipping over capacity. It was studied that ship owners reduced 10-15 percent of overcapacity by slow speed services.

Cost reduction practices in supply chain-

At low freight rates it became difficult for the ship owners to operate their fleet. Number of parameters was considered to reduce the overall cost of operations in shipping. It mainly includes –

- Canal transit dues
- Crew charges
- Port dues
- Additional intermodal costs
- Limitations of liability in insurance
- Bunker costs

CHAPTER-7

CONCLUSION-

Against the background of a global economic downturn and financial crisis, growth of world seaborne trade continued albeit at a slower rate. The year 2008 marked a major turning point in history of world shipping industry. Growth in developing economies with economies in transition has turned out to be less resilient than expected. In tandem with the global economic downturn and reduced trade, growth in international seaborne trade decelerated in 2008, expanding by 3.6 percent as compared with 4.5 percent in 2007. The volume of international trade in 2008 was estimated at 8.17 billion tons. At market equilibrium aspect the falling demand couldn't stop the supply of growing fleet and it created a considerable oversupply of shipping tonnage. At the beginning of 2009 the world merchant fleet reached 1.19 billion dead weight tonnages. This growth was a result of vessels order placed before the financial crisis. In order to maintain demand-supply balance the demolition of fleet was not enough. Since the beginning of the economic crisis numerous orders at the world's shipyard have been cancelled. Although new orders for most vessel types have practically come to standstill, vessels continued to be delivered by the shipyards especially in dry bulk shipping segment

As a consequence of falling demand and over supply of shipping tonnage freight rates fallen from their highs of previous year. The beginning of 2008 saw a continuation of the buoyant trend experienced in the preceding year in all sectors. Trade volume in dry bulk sector sustained dramatic declines which continued for the remainder of the year and well in to 2009. Though it can be said a tough time for world economy but the organized way of shipping business in world helped in survive in recession. The unified system of administration of shipping operation worldwide did not allow shipping industry to collapse as other major sector of economy. Finally it can be asserted that dynamics of shipping industry supported it in tough time and day by day taking place technical advancements made shipping as most preferred mode of transportation.

GLOSSARY-

Adjustable-rate mortgage (ARM) – It is a system borrowing system which allows the homeowner to pay just the interest (not principal) during an initial period.

Bulk Commodities- in terms of transportation and procurement bulk commodities include the commodities which are traded at bulk level such as iron ore, Coal, Grains etc.

Bulk carriers- It is specialized type of vessel in which the commodities are transported in bulk.

Credit default swaps- Credit defaults swaps (CDS) are financial instruments used as a hedge and protection for debt holders from the risk of default.

Dry bulk shipping- It is a major segment of shipping that deals with the transportation of dry commodities in bulk.

Developed economies- It includes the major economies of world which have a higher per capita income, strong financial status and gross domestic product growth such as USA, Japan etc.

Developing economies- This includes the economies which are growing at a higher pace and trying to reach in class of developed economies such as China and India.

Dead weight tonnage- It is a measurement unit in which the cargo loading capacity of a vessel is calculated.

Recession- It is a term used in economics to define the depressed economic conditions in which production, consumption and other associated economic activities such as employment and income of public goes down.

Seaborne commodity trade- The term is used to define the commodities trade for the shipping has been as a mode of transportation.

World fleet- World fleet is the term used for the shipping capacity of whole world in terms of number of vessels and their combined cargo carrying capacity.

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