UNIVERSITY OF GHANA

AN ASSESSMENT OF THE EFFECT OF THE RECENT ECONOMIC RECESSION ON
THE OPERATIONS OF PORT OF TEMA

BY

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AN ASSESSMENT OF THE EFFECT OF THE RECENT ECONOMIC RECESSION ON THE OPERATIONS OF PORT OF TEMA
Declaration

I hereby declare that, apart from works from other authors that have been duly acknowledged, this is the result of my own research work done under supervision of Dr. Kwadwo Kwabia and Mrs Felicity Aba Sey.

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21/10/2013
DEDICATION

I dedicate this to Kingsley my husband, Nana Nketia, Kofi and Akua Attafuah for their support and encouragement.
Acknowledgement

I am immensely grateful to God Almighty for sustaining me in my quest for higher education.

This study would not have been possible without the help extended to me by my supervisor Mrs Felicity Aba Ankomah Sey Who made time within her busy schedules to make useful contributions and comments which helped my work. Dr. Manuel and Mr. Abebrese, I am saying thank you.

I also thank the authorities of Ghana Ports and Harbours Authority for granting me the audience and the permission to conduct this study at Tema Port. Further, I owe a debt of gratitude to my course mates and a special friend Mr Edem Agbe who read and made meaningful contributions to this work.
Abstract
The global economic recession of 2007 to 2009 affected both developed and developing countries. A major effect of the recession was the contraction of international flow of goods and services. With seaborne trade being a key player in international trade, this study sought to explore the effect of the global economic recession on the operations of the maritime industry in Ghana. The main objective of the study was to ascertain whether the global economic recession had any effect on Tema Port and its operational activities. Secondary data collected from the Ghana Ports and Harbours Authority (GPHA) was the major source of data. The data was collected from the cargo traffic and vessels call report between the period 2005 to 2011; and the revenue report for the same period. Data analysis was largely quantitative, with the researcher using trend analysis and descriptive statistics.

The study found out that the global economic recession did not have significant effect on the operational activities of Tema Port in terms of revenue generation even though Cargo traffic declined in 2009. Revenue generated from the operational activities of the Port was also relatively higher during the recession than the period prior to the recession. The nature of vessels call was on the averagely stable during the recession (2007 to 2009) and post-recession periods (2010 and 2011) compared to the periods prior to the recession (2005 and 2006). Three key factors were identified to have contributed to this trend, the upward adjustment of the tariff on some selected items in the year 2009 and 2011, the political conflict in La Cote d’ivoire during 2007 – 2010 led landlocked countries to divert their trade routes through Ghana.
The third factor is the discovery of crude oil in Ghana leading to an increase in investment in the country. The study however recommended that in order for Port of Tema to stay competitive in the sub region, they may have to look at their rate of tariff increment especially now that the sub region is relatively peaceful to be able to attract more transit cargoes from the landlocked countries.
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CHAPTER ONE: INTRODUCTION TO THE STUDY

1.0 INTRODUCTION
This chapter is the general introduction to the study. The chapter discusses the background of the study, problem statement, objectives and the research questions that the study sought to address. The scope of the study, study justification and limitations were also discussed in this chapter. The chapter further presents a summary outlined of issues discussed in the various chapters of the study.

1.1 BACKGROUND TO THE STUDY
The global economic crisis/recession which started in the year 2007 has been described by economists as the worst crisis since the great depression of 1930, and was characterized by huge losses of both financial and non-financial wealth (Cline, 2009). These losses were experienced by both developed and developing countries, with the global economic system moving into a period of recession. Background paper prepared by the World Bank for the G-20 Finance Ministers and Central Bank Governors Meeting in 2009 (World Bank, 2009) indicated that global economy and global trade for the first time since World War II contracted by 2%, and that the decline was the biggest since the 1930s (Zoellick, 2009) The extent of the effect however differs among the developed and the developing economies.

While several studies (such as Aryeeetey and Ackah, 2008; Arieff et al, 2010) have indicated that the advanced economies have been the hardest hit by the crisis, with a growth rate projected to decline from 2.7% in 2007 to about 1.0% in 2008, developing
economies have not been spared. Growth in developing economies, including emerging economies, is estimated at 6.3% for 2008, down from the realized growth rate of 8.3% in 2007 (Ackah et al, 2009).

In Latin America and the Caribbean, the volume of exports from the region decreased by 11%, the worst figure in 72 years, thus since 1937, while imports dropped by 14%, the steepest drop in 27 years (Sanchez and Salas, 2009). The Gross Domestic Product (GDP) for the Latin America and the Caribbean region also contracted by 1.9% in 2009, raising unemployment rate by 9% and worsening poverty levels. Africa also has its share, according to Ackah et al (2009) the continent has witnessed some adverse effects, evidenced in a slowdown in the rate of growth from 6.2% in 2007 to an estimated 5.2% in 2008. The International Monetary Fund (IMF) also estimated in 2009 that average economic growth in Sub-Sahara Africa would slow down to 1%, from an annual average of over 6% to 1% over the previous five years, before rebounding to 4% in 2010 (Arieff et al, 2010).

Even though the global economic recession has effect on almost all sectors of the global economy, studies and economic reports have indicated that one of the sectors heavily affected by the economic recession was the transport sector, with the maritime industry being the most affected. According to the UNCTAD-Review of Maritime Transport (2010), the contraction in industrial production in the years 2008 and 2009 reduces output and trade, and by extension, reduced demand for maritime transport services and depresses global seaborne trade.
The report (UNCTAD-Maritime Review, 2010) indicated that in 2009 total goods transported by way of seaborne trade amounted to 7.8 billion tons down from 8.2 billion tons recorded in 2008. Thus a decline of about 4.5% in seaborne trade was recorded in 2009.

As a reflected consequence of financial crises, the transport industry suffered from certain loss of cargoes, which resulted in a highly contracted area of business in this industry leaving certain players with no competitive power. According to Carglar, Oral and Esmer (2010), a clear example of such great loss has been experienced in shipping, where the number of ship voyages has displayed a dramatic fall. Such loss and sharp fall has caused ports to suspend their investments, lower their tariffs, and start taking certain measures to decrease their costs. The decrease in sea transport according to Carglar et al (2010) also decreased the freight traffic of seaports and container charter rates had a dramatic decline from the middle of 2008 to April 2009. In early 2009, some container shipping lines lowered their freight rates to zero and shippers paid only surcharges as a contribution to the carriers’ operating costs (Carglar, et al, 2010). Due to the negative effects of the global economic recession on the global maritime industry, individual country assessments is needed to contribute to knowledge and also add up to empirical literature.
1.2 STATEMENT OF PURPOSE

Several studies have been conducted to ascertain the effect of the global economic recession on the performance of various sectors in the Ghanaian economy. Asante and Fenny (2009) assessed the effects the global economic crisis on health. Otoo and Asafu-Adjaye (2009) conducted an empirical assessment on the effects of the global economic crisis on the Ghanaian labour market. Aryeetey and Ackah (2008) in a paper discussed the global credit crunch and the implication for the Ghanaian economy. Among the major findings common to all these studies is that international trade and movement of goods and services has been a major channel through which the financial crisis influenced the Ghanaian economy. The maritime industry of Ghana being a key player in the country's international trade has also been affected.

Despite these findings, little is known about the extent to which the global economic recession has affected the operational activities in the Ghanaian maritime industry.

To comprehensively conduct this assessment, the study was focused on the period 2005 to 2011. The year 2005 – 2006 represent the period before the economic recession, 2007 – 2009 represent the period of economic recession/meltdown while the years 2010 and 2011 represent the period of global economic recovery.
1.3 OBJECTIVE OF THE STUDY
The main objective of this study was to ascertain whether the global economic recession had any effect on Tema Port and its operational activities. Specifically the study sought to:

i. Assess the trend of cargo traffic to Tema Port between 2005 and 2011.

ii. Ascertain the nature and types of vessels call to the Port of Tema between 2005 and 2011.

iii. Estimate the cost implications of cargo traffic and nature of vessels call on revenue generation.

1.4 RESEARCH QUESTIONS
To address the main and specific objectives of the study, the study sought to answer the following research questions:

i. What has been the trend of cargo traffic to Tema Port between 2005 and 2011?

ii. What has been the nature of vessels call to the Port of Tema between 2005 and 2011?

iii. What are the effects of trend of cargo traffic and nature of vessels call on revenue generation between 2005 and 2011?
Table 1.1: A summary of how information needed to answer research questions will be gathered

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>From Whom is Data needed</th>
<th>How Data was collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What has been the trend of cargo traffic to Tema Port between 2005 and 2011?</td>
<td>Monitoring and control departments, operation managers, Shippers Auth.</td>
<td>Documentary analysis</td>
</tr>
<tr>
<td>What has been the nature of vessels call to the Ports of Tema between 2005 and 2011?</td>
<td>Monitoring and control departments, operation managers, Shippers Authority</td>
<td>Documentary analysis.</td>
</tr>
<tr>
<td>What are the effects of trend of cargo traffic and nature of vessels call on revenue generation between 2005 and 2011?</td>
<td>Revenue/accounts departments</td>
<td>Documentary analysis.</td>
</tr>
</tbody>
</table>

1.5 SCOPE AND SIGNIFICANCE OF THE STUDY

Geographically, the study is limited to the Tema Port in terms of actors and spatial coverage in line with the objectives and research questions. The study concentrated on the operational activities of the port during pre-recession (2005 - 2006), recession (2007 - 2009) and post-recession (2010 - 2011) periods (thus from 2005 to 2011).

With the growing interest in the effects of global economic recession on economies of developing countries, a careful empirical investigation into the extent to which it affects the operational activities of the maritime industry is very necessary.
Although studies have been conducted into the effects of the economic recession on international trade, little is known empirically about the effects it has on the Port of Tema. This study therefore contributes to the body of knowledge on the effects of the global economic crisis on the maritime industry and international trade. It will also serve as a useful reference for future researchers and those who will seek information about the subject in the future.

1.6 LIMITATIONS OF THE STUDY
The study was limited to mainly secondary data collected from the Ghana Ports and Harbours Authority. Access to some selected key individual to be interviewed to enhance an in-depth exploration of some trends emerging out of data was difficult. Another limitation of this study was inability of the researcher to construct a regression model to ascertain the extent to which identifiable factors impacts in the operations of the Tema Port.

1.7 ORGANISATION OF THE STUDY
The study has been organized into five main chapters. Each chapter was further divided into different sections and sub-sections.

The first chapter dealt with the general introduction to the study which further comprises the background of the study, statement of the problem, objectives of the study, scope of the study, justification for the study and the limitations of the study.
Chapter two of the study reviewed theoretical and empirical literature. Areas reviewed include the origin of the financial crisis, causes of the crisis, effect of the financial crisis on the global economy – thus developed and developing countries. The chapter further discussed the effect of the financial crisis on Africa and narrowed the discussion to the Ghanaian economy.

Chapter three discussed the methodology employed for the study. The fourth chapter consisted of presentation of the data collected from the field and an in-depth analysis and discussion of the data. Finally, chapter five presents the conclusion, the main findings of the study and the appropriate recommendations.
CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews relevant empirical and theoretical literature related to the study. Areas of review include the origin of the financial crisis, causes of the crisis, effect of the financial crisis on the global economy – thus developed and developing countries. The chapter further discussed the effect of the financial crisis on Africa and narrowed the discussion to the Ghanaian economy.

2.1 THE ORIGIN OF THE GLOBAL FINANCIAL CRISIS

The Global Financial Crisis of 2007 – 2010 has been considered to be the most substantial economic crisis in the world since the Great Depression of the 1920s and 1930s (Bolton, 2008; Almunia et al, 2009). After the Great Depression, many countries instituted financial regulation in quest to prevent future economic crisis (Barrel et al, 2009). These regulatory institutions and systems provided public screening and monitoring of the financial markets, and required firms and banks to adhere to strict standards of accounting and to publicly reveal information on assets, debt and earnings (Financial Service Authority, 2009; Bolton, 2009). The regulatory approach was premised on the notion that more and better information about clients made prices conform to the risks banks were taking relative to their capitalization (Almunia et al, 2009).
However, the fast unraveling of these long standing regulations – starting in the 1990s – allowed extreme leveraging on an unprecedented economic scale with untested instruments. With insufficient financial market regulation this leveraging carried great and poorly understood risk. The result of these activities is the global financial crisis.

Even though analysts and researchers have agreed that the global financial crisis emerged in the United State of America (Bolton, 2009; Jickling, 2010; Herbst and Wu, 2009) there are various views on the fundamental causes.

Ghilarducci et al. (2010) argued that the financial crisis is global and is deeply rooted in a decade-long misuse of the financial market for rent seeking. According to them the financial industry has largely abandoned its role as a service industry, supposedly charging reasonable fees for the services of spreading risk and allocating capital and credit. Instead it provides a market for corporate control – mergers and acquisitions – and a casino for betting on or hedging practically any kind of risk – the derivatives market.

Bolton (2009) argued that the origin of the global financial crisis can be traced to the housing bubble in USA. The housing bubble which peaked in 2007 as explained by Bolton (2009) caused the values of securities tied to U.S. real estate pricing to fall, damaging financial institutions worldwide. The global economy was therefore forced to slow down in terms of growth as credit tightened and international trade declined.

Herbst and Wu (2009) in assessing the origin of the financial crisis noted that “the financial crisis of this first decade of the 3rd millennium has features that make it both severe and somewhat intractable.
According to them it might not be an exaggeration to call it a worldwide economic pandemic. It propagated quickly due to modern communications and worldwide financial markets integration. Herbst and Wu (2009) further noted that governments intervened relatively early, but their efforts were without clear central coordination or a unified plan. This created uncertainties and was part of the cause for a slowing or even freezing of some credit and derivative markets.

Considering the literature discussed above it seems accurate to say that the financial sector is "front and center" of the economic meltdown. The mindset of some key policy makers could be seen as viewing the financial sector not as providing lubrication to the mechanism of production and trade, but as the central theme itself." (Herbst and Wu, 2009).

2.1.1 CAUSES OF THE FINANCIAL CRISIS

While many causes for the financial crisis have been suggested, with varying weight assigned by experts, the United States Senate in issuing the Levin–Coburn Report found "that the crisis was not a natural disaster, but the result of high risk, complex financial products; undisclosed conflicts of interest; and the failure of regulators, the credit rating agencies, and the market itself to rein in the excesses of Wall Street" (Jickling, 2010).

The Congressional Research Services Report (CRS Report, 2009) identified two major causal factors: imprudent lending and the housing bubble. According to the report, lending standards in the American financial system were relaxed amid low interest rate to the point that many people were able to buy houses they couldn’t afford.
However, when prices began to fall and loan default rates increased, there was a severe shock in the financial system. The financial shock waves sent a signal of failure, and many people lost confidence in the financial system.

The second causal factor identified in the report is the housing bubble. According to the report, the Federal Reserve with its easy money policies allowed housing prices to rise to unsustainable levels. The bursting of the bubbles resulted in high level of financial fear, high loan default rate and loss of confidence in financial institutions. These, led to the failure of the financial system.

The United States Financial Crisis Inquiry Commission (FCIC) Report, (2011) cited in Kowalski and Shachmurove (2011) made several observations about the causes of the financial crisis. The FCIC (2011) report ascribed the cause of the financial crisis to a lack of government regulation and oversight in the mortgage and mortgage-backed securities market. According to the FCIC (2011) report, the financial crisis was completely avoidable. In the report, the blame for the crisis was squarely placed on human action and inaction rather than computer error or random act of nature. The report explained that leaders of the financial sector ignored warning signs and mismanaged risks intricately tied to the wellbeing of their average citizens. The rise in housing prices, predatory lending, household mortgage debt, and short-term lending markets were all red flags that went largely unnoticed. The report further noted that the Federal Reserve failed to stop the growth of toxic mortgages. The deregulation trend severely destabilized the financial markets.
The Securities and Exchange Commission (SEC) failed to require additional capital for risky investment by the poorly regulated investment banks. Policy makers made no attempt to slow the ever increasing mortgage securitization.

Furthermore, financial institutions according to the FCIC (2011) report adopted flawed systems of corporate governance and risk management. They failed to self-police and instead assumed higher risk backed by too little capital. These firms chased large profits without giving proper consideration to the large risks accompanying the profits. Employees of financial firms and credit rating agencies replaced human judgment with risk assessing mathematical models. The report concluded that the combination of excess borrowing, increasingly risky investments, and the lack of transparency caused the ensuing crisis. Both banks and consumers borrowed beyond their means.

Lorenzo (2009) in a study on the causes of the global financial crisis identified global imbalances as a contributing factor. According to Lorenzo, global financial flows were characterized by an unsustainable pattern: some countries (China, Japan, and Germany) run large surpluses every year, while others (like the U.S and UK) run deficits. The U.S. external deficits have been mirrored by internal deficits in the household and government sectors. U.S. borrowing cannot continue indefinitely; the resulting stress underlies current financial disruptions.

Snow, (2008) also identified lack of transparency and accountability in mortgage finance as a contributing factor to the failure of the global financial system. Snow explained that "throughout the housing finance value chain, many participants contributed to the creation of bad mortgages and the selling of bad securities, apparently feeling secure that
they would not be held accountable for their actions. A lender could sell exotic mortgages to home-owners, apparently without fear of repercussions if those mortgages failed. Similarly, a trader could sell toxic securities to investors, apparently without fear of personal responsibility if those contracts failed. And so it was for brokers, realtors, individuals in rating agencies, and other market participants, each maximizing his or her own gain and passing problems on down the line until the system itself collapsed. Because of the lack of participant accountability, the originate-to-distribute model of mortgage finance, with its once great promise of managing risk, became itself a massive generator of risk."

The Economist (2008) also identified failure of risk management systems to be among the causes of the financial crisis. According to the report some firms separated analysis of market risk and credit risk. This division did not work for complex structured products, where those risks were indistinguishable. "Collective common sense suffered as a result," leading to high default rate and bad loans.

2.2 OVERVIEW OF GLOBAL SEABORNE TRADE (MARITIME TRADE)

Studies have observed that almost 80 percent of international trade in goods is transported by sea (UNCTAD 2010; 2011). This established the fact that ocean shipping plays a central and essential role in international trade and the world economy at large. Therefore, it is vital to understand the factors affecting trade and shipping growth or decline. This section presents a brief overview of seaborne trade/maritime trade in the world, the contribution of seaborne trade to international trade and development.
Maritime trade generally is divided into three broad categories: liquid-bulk, dry-bulk, and general cargo. Petroleum alone accounts for nearly all of the liquid-bulk trade and for almost half of the total world tonnage shipped. About one-fourth of world tonnage consists of dry-bulk commodities—principally mineral ores, coal, and grain. The remaining one fourth consists of the variety of manufactured goods and consumer products called general cargo (UNTACD, 2009; 2011).

Traditionally, the shipping industry is categorized in two major sectors (markets): the bulk shipping sector – engaged mainly in the transportation of raw materials such as oil, coal, iron ore and grains – and the liner shipping sector (involved in the transportation of final and semi-final products such as computers, textiles and a miscellany of manufacturing output) [Haralambides, 2008].

Haralambides (2008) explained that bulk shipping uses large and unsophisticated ships, such as tankers and bulk-carriers, to transport goods in bulk on a contract basis. The service requires minimal infrastructure, and in this respect, it resembles a taxi service whereby the contractual relation between passenger and driver (cargo owner and ship owner) expires upon the completion of the trip. The industry is highly competitive with prices (freight rates) fluctuating wildly even in the course of a single week.

On the contrary, liner shipping is geared to the provision of regular services between specified ports, according to timetables and prices advertised well in advance (Haralambides, 2008; Jansson and Shneerson, 1987).
The service is in principle open to everyone with some cargo to ship, and in this sense, it resembles a public transport service, like that of a bus or a tram. The provision of such a service — often of global coverage — requires extensive infrastructure in terms of terminals and/or cargo handling facilities, ships, equipment, and agencies. Liner shipping commonly operates within conferences— international groups of private liner companies that collectively agree on routes, schedules, rates, and other aspects of liner service. The bulk industry on the other hand does not form conferences. It employs a variety of ships, usually on a time- or voyage-charter (rental) basis, to carry single, large-volume commodities (e. g., iron ore, grain, coal, crude oil) over fixed and sometimes long periods of time. The liner industry thus tends to manage competition among major companies while the bulk industry operates under much more open competition. The liner trades involve by far the largest portion of world trade when measured by dollar value, while the bulk trades account for the largest portion of volume or tonnage.

The shipping industry consists of several diverse businesses and sectors. In total, it includes those companies that operate the world fleet of over 35,000 major, cargo-carrying ships—tankers, chemical and liquefied gas carriers, combination bulk and oil carriers, ore and dry-bulk ships, general cargo ships, container ships, and many even more specialized types such as automobile carriers and roll-on, roll-off (RO/RO) ships (UNTCAD, 2009). The principal sectors today are the tanker operators, the dry-bulk operators, and the liner operators. The tanker and dry-bulk-carrier operators are similar in that fleets of ships usually are owned and/or chartered to carry single, large-volume commodities (i. e., iron ore, grain, coal, crude oil, and petroleum products) over fixed,
and sometimes, long periods of time. Shipping thus is closely related to a larger enterprise. Many independent operators participate under ‘time-charter’ or voyage-charter contracts; in other cases, major petroleum or other resource companies own and operate their own fleets.

The liner industry, or general cargo business, on the other hand, operates more like a railroad—carrying freight from port to port at fixed rates and on a regular schedule. The modern containerships and RO/RO ships are typical of the ships used in this trade within the industrialized world. The liner industry is characterized further by the predominance of conferences, international groups of carrier lines that collectively agree on routes, schedules, rates, and other aspects of liner services.

2.3 SEABORNE TRADE AND INTERNATIONAL TRADE DEVELOPMENT

Maritime transport remains the backbone of international trade with over 80 per cent of world merchandise trade by volume being carried by sea. During the past three decades, the annual average growth rate of world seaborne trade is estimated at 3.1 per cent (IMF, 2006). At this rate, global seaborne trade would be expected to increase by 44 per cent in 2020 and double by 2031, potentially reaching 11.5 billion tons and 16.04 billion tons, respectively (IMF, 2010; UNCTAD, 2010). Although maritime transport has generally been associated with the carriage of high-volume low-value goods (e.g. iron ore and coal), over recent years the share of low-volume, high-value goods (e.g. manufactured goods) carried by sea has been growing.
According to WTO (2009) manufactured goods account for over 70 per cent of world merchandise trade by value. Traded manufactured goods include consumption goods as well as intermediate goods, parts and semi-finished products that have expanded in tandem with intra-company trade, international outsourcing and globalization. As much of this trade is carried in containers, world containerized trade has grown significantly and is expected to grow over the coming years at a pace that will require a doubling of the container handling capacity (Norwegian Center for Maritime Medicine - NCMM, 2010). In addition to economies of scale associated with larger cargo volumes, the container shipping sector is increasingly investing in larger containerships to further capitalize on these economies and reduce costs. According to WTO, (2009) traditional agricultural bulk cargo (e.g. grain) are increasingly being transported in containers, avoiding the higher freight rates in the bulk market and reflecting the greater economies of scale available to larger containerships. These considerations highlight the economic importance of maritime transport and the potential for further growth in this sector and the expansion of the maritime cargo base to include lower-volume, higher value goods.

2.4 WORLD SHIPMENTS IN DEVELOPED AND DEVELOPING ECONOMIES

Strong consumer demand and rapid industrial expansion in emerging developing economies continue to drive growth in world seaborne trade. The majority of developing and transition economies are dependent on the commodity sector, including fuels, as their largest source of revenue, employment and foreign exchange. Over 100 developing
economies, including least developed countries and transition economies, derive more than 40 per cent of their export earnings from primary commodities (Maddison, 2010). This reliance on the commodity sector is reflected in the composition of their seaborne trade.

The structure of developing economies’ seaborne imports highlights the growing energy needs in these countries and the expansion of South-South trade. Rapid economic growth and industrial production (e.g. China and India) have spurred growth in oil imports by developing countries. Africa and Latin America are increasingly becoming suppliers of China’s primary commodity needs, while China’s consumer goods are increasingly exported to Africa and Latin America. In 2006, over 70 per cent of China’s exports to Africa were manufactured goods, while around 60 per cent of Africa’s exports to China consisted of fuels (North, 2009). During the same year, fuels and other minerals made up 40 per cent of Latin America’s exports to China, while over 60 per cent of China’s exports to Latin America were manufactured goods. It is expected that both developed and developing economies will continue to be heavily dependent on fossil fuel sources of energy. Coal is already emerging as a supplement and, potentially, an alternative to oil and gas. By far one of the most polluting fossil fuel sources, growth in coal use raises some environmental concerns. Addressing environmental implications of coal-fired power plants, while meeting energy demands of growing developing economies, remains a challenge.

In 2007, developed economies accounted for 33.3 per cent of global goods loaded. Within this grouping, Europe was the major player and dry cargo the main cargo flow,
followed by petroleum products (exports) and crude oil (imports). Europe's share of world goods loaded amounted to 14.8 per cent, followed by Australia and New Zealand (8.5 per cent combined), North America (7.9 per cent) and Japan and Israel (2.2 per cent combined). Europe is the destination of 26.9 per cent of world crude oil shipments, 32.8 per cent of petroleum products and 24.9 per cent of dry cargo. North America accounted for 14.8 per cent of world goods unloaded, followed by Japan and Israel (10.8 per cent), and Australia and New Zealand (1.2 per cent) [Maddison, 2010].

In contrast with developed nations, developing economies contribute a larger share of global exports than imports. In 2007, 63.2 per cent of goods loaded in the world originated in developing regions, while 46.2 per cent of world's shipments were unloaded at ports in developing countries. Reflecting their trade structure, ports in developing countries loaded 85.8 per cent of total world crude oil exports and 48.2 per cent of total world exports of petroleum products. In terms of goods unloaded, ports in developing economies accounted for 52.1 per cent of world dry cargo imports, 39.2 per cent of world petroleum products and 33.3 per cent of crude oil. Developing Asia's dominance both as a loading and unloading area is maintained with a share of 38 per cent with respect to goods loaded and 37.1 per cent of goods unloaded. Transition economies accounted for 3.5 per cent of world goods loaded and 0.7 per cent of world goods unloaded. Oil shipments loaded at their ports are estimated to have reached 6.9 per cent of total world oil loaded, reflecting in particular oil shipped from the Black and Baltic Seas.
The global financial crisis initially affected advanced economies, emerging markets, and low-income countries in very different ways. According to the IMF, (2010) advanced economies were first hit mainly by the systemic banking crisis in the United States and Europe. Emerging markets with well-developed financial systems were initially mostly affected by cross-border financial linkages through capital flows, stock market investors, and exchange rates. In financially less-developed countries the growth and trade effects dominated, with lags. Now, however, growth and trade effects are crucial for all countries thus the global economy.

According to (Ackah et al, 2009) the global slowdown in economic activity has pushed commodity prices down with negative effects on export earnings and the external current account, fiscal revenues, and household incomes worldwide. Commodity exporters face terms of trade deterioration. IMF research (2010) shows that in the past a 1 percentage point slowdown in global growth has led to an estimated ½ percentage point slowdown in sub-Saharan African countries.

One of the most salient features of the financial crisis’ effect on the global economy was the decline in international trade relative to gross domestic product (GDP), which was unusually abrupt compared with past recessions for most economies, including for the emerging market economies (Coulibaly et al, 2010). Several transmission channels may help explain this unprecedented drop in international trade, including the steep reduction...
in global demand, as well as the significant tightening of external financing that reduced firms operating capital and limited their ability to satisfy demand for their products.

2.6 SEABORNE TRADE AND THE GLOBAL FINANCIAL CRISIS

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 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 (Global Shipping, 2011).

The shipping industry entered 2009 in a state of crisis. All shipping sectors had been hit hard, with the dry-bulk sector struggling to recover from a plunge in November 2008 that led to low performance index recorded in 2009 (Global Shipping, 2011). The first months of 2009 have seen a huge amount of capacity changes in the industry, including the lay-up of vessels. In general carriers have responded to the global economic downturn by
radically altering capacity, slower steaming and changes in frequencies. In addition to this many shipping companies have responded with job cuts, increase in freight rates appears to be a must after rates have plummeted sharply in the months since the downturn started. In the case of Africa the downturn in volumes has been smaller than for most other destinations.

In the container sector as much as 10% of capacity is said to have been taken out of service (North, 2009). The world's largest container line, Maersk, has already laid off nearly ¼ of its employees in the last 18 months having seen cargo volumes shrink, although not as much as the number of employees. A big loss is expected for the line, both for 2009 and 2010. To cover increasing costs the company, and several of its main competitors, has announced that price hikes will have to be made on the main routes. Such announcement is of course a different thing than to find an understanding among customers for such a change in times of recession. One of few positive signs for the shipping sector over the last twelve months has been sharply falling bunker costs during much of 2009.

Some believe that shipping lines are not doing enough to counteract the global recession. If rates will continue to go down, the industry remains in serious trouble. That the industry is currently sailing on deep waters is shown by the fact that the spot rates for a 40-foot container from Hong Kong to Los Angeles fell to a new low of USD 950 in May 2009, or down by 53% from an average of USD 2,040 a year ago (Drewry 2009).

Drewry Shipping Consultants has predicted that container capacity will grow by 8% this year and 10% in 2010. As a result the industry could see combined losses of USD 20
billion before interest and tax in 2009, compared with a 5 billion profit in 2008. Also companies in the service sector to shipping has been hit by reduced traffic and the Panama Canal has offered “empty-ship” rates until the end of September for containership carrying less than 30% of capacity (Panama Canal 2009). Not only the Panama Canal has seen its earning fall dramatically, just as it is about to start a major widening and deepening of the canal. The same has happened to the Suez Canal that has seen traffic and incomes fall sharply compared to a year ago. The fall in traffic as well as income of these two major canals affected their respective economies significantly. The same can also be said of income of 1,000s of smaller service companies of all kinds in ports of the world.

2.7 EFFECT OF THE FINANCIAL CRISIS ON AFRICA

The direct impact of the financial turmoil on sub-Saharan Africa has been disregarded at the initial stages. The disregard was on the bases that African countries are less integrated in the global financial system and their financial institutions are relatively inactive in the derivatives market, relying mainly on domestic market resource mobilization rather than on foreign borrowings to finance operations. Some market and financial analyst also argued that the ownership of African banks had very little to do with banks in Europe and the United State, hence reducing the likelihood of bank failures overseas affecting African banks (ISSER, 2008).

However, this position was quickly revised only after it became obvious that the financial crisis and meltdown of the global economy could affect demand for African exports as
well as various flows to Africa (Marcias and Massa, 2009; Lyakurawa, 2010; ISSER, 2008). Macias and Massa (2009) in a study on Africa noted that Sub-Sahara Africa’s growth rate dropped from 6.9% in 2007 to 5.5% in 2008. The International Monetary Fund (IMF) in 2009 also forecasted a further reduction for growth for the year (thus 2009) by 1.6 percentage points to 3.5%. In April 2009, the IMF revised again its forecast leading to a new projection for SSA growth in 2009, equal to 1.7%. The period also witnessed an increased in current account deficits due to reduction in commodity exports, reduction in financial flows and depreciation of currencies in African economies (Lyakurawa, 2010)

According to the AERC (2010) report, the impact of the crisis on agriculture, oil, mining and mining sectors was significant due to falling commodity prices. Unemployment and social crisis during this grew rapidly, and governments were forced to cut health, education, social protection and food security spending due to lower budgetary revenues.

In the international market (international trade), the crisis affected African economies through a fall in global commodity prices, and also through a wider drop in demand for all (including non-commodity). Europe and North America before the financial crisis buy two-thirds of Africa’s exports; however, their demand fell sharply between 2007 and 2009. Commodity prices fell by 25% in 2009, offsetting the rise in 2006, leading to income losses of 2-9% of GDP to Africa. According to Brinkman et al (2010) international trade and financial linkages were the main channels through which the crisis spread to African countries since they are mainly dependent on exportation of raw materials and other primary commodities and external funding sources to finance
development. They further noted that the financial crisis manifested in African countries as lower export volumes, a fall in commodity prices, less and more expensive foreign capital, lower remittances and fewer tourists. This has caused declines in income growth, job losses and budgetary pressures, which could lead to reduced government spending on social protection systems.

2.8 EFFECT OF THE FINANCIAL TRADE ON THE GHANAIAN ECONOMY

The economy of Ghana, just like that of other African countries was been described as robust despite the global financial crisis and economic meltdown. In 2007, according to the state of the Ghanaian economy report, Gross Domestic Product (GDP) growth rate was reported at 7.3% compared to the 6.3% in 2007 (ISSER, 2008). The growth rate according to ISSER, reflects a general increase in government consumption spending and investment. According to the 2009 State of the Ghanaian Economy Report; the heightening of the global economic crisis in 2009, particularly in the first half resulted in Ghana’s real GDP falling sharply by 3.1% from the 2008 growth rate. The economy therefore grew by only 4.1% in 2009 (ISSER, 2009). The low real GDP growth rate further translated into a decline in the real per capita GDP growth rate from 4.8% in 2008 to 2.8% in 2009. Inflation during the period was generally high at 19.29% (ISSER 2009).

The IMF in 2009 put Ghana on a list of 26 countries highly vulnerable to an external shock of declining trade, remittances, FDI and ODA due the global financial crisis (IMF, 2009). According to the IMF, Ghana was vulnerable to trade shock due to the flowing
reasons: (i) very high current account deficit; (ii) very high budget deficit; (iii) aid dependency; (iv) export dependency; and (v) exchange rate depreciation.

2.8.1 INTERNATIONAL TRADE AND GLOBAL FINANCIAL CRISIS IN GHANA

Exports of goods and services accounted for about 40% of GDP in recent years – below export-oriented countries in Asia (ISSER, 2008). About 50% of these exports are destined for developed countries and another third for South Africa. Ghana’s export structure remains highly concentrated with cocoa and gold accounting for 71% of exports of goods and timber for an additional 6% in 2008. This makes Ghana very vulnerable to external shocks, such as a decline in prices or export volumes. Studies have also shown that GDP growth rate is correlated with commodity prices (World Bank, 2008b). Cocoa and gold prices more than doubled between mid 2005 and mid 2008. But – like other commodities – after prices peaked in the first half of 2008, Cocoa prices declined by 32% and gold prices by 21% in the last quarter of 2008 (Ackah et al, 2009). During the period, other exports provide little of a cushion and have been affected by the global economic crisis as well, especially because some of them are luxury items. Horticultural exports have increased in recent years, but remain small. They are dominated by pineapples, but also include mangos and bananas. They accounted for only US$46 million in 2008.

The global financial crisis according to Ackah et al (2009) also put the value of the exchange rate under pressure during the period.
The cedi lost about 23% of its value against the US$ and 19% against the euro in 2008. Ghana is vulnerable to further depreciation of its currency because of a very high current-account deficit, rising debt, low international reserves (only covering 1.8 months of imports at the end of 2008) and high and rising inflation. A depreciated currency means higher import costs and higher debt repayments. Both put pressures on the government budget and curtail economic growth. Ghana is highly dependent on imports of fuel and capital goods. Economic and market observers complained about the higher costs of fuel and agricultural inputs. Ghana also imports significant quantities of rice and wheat, in addition to sugar, milk products and fish.
CHAPTER THREE: METHODOLOGY

3.0 INTRODUCTION

This chapter discusses the methodology adopted for the study. The chapter gave a brief overview of the methodological approach, target population, data requirements and source of data, approaches used in collecting data and techniques for data analysis.

3.1 METHODOLOGY

This study adopted a mixed method approach, using quantitative and qualitative techniques. The use of mixed methods approach in principle requires the researcher to merge quantitative and qualitative research techniques and procedures in a way that the resulting combination has complementary strengths and non-overlapping weaknesses (Creswell, 1994). Greene and Caracelli (1997:7) also stated that the underlying rationale for the use of mixed methods inquiry is to understand more fully, to generate deeper and broader insights, to develop important knowledge claims that respect a wider range of interest and perspectives using a combination of quantitative and qualitative techniques. Triangulation between quantitative and qualitative research techniques produces good results (Tashakkori & Teddlie, 2003).

As stated in the objectives of the study, there is the need to ascertain and discuss the effects of the global economic recession on the operations of Tema Port; and a thorough
descriptive, interpretative, content and trend analysis. The mixed methods approach is therefore appropriate for a study of this nature.

3.2 TARGET POPULATION

The Operations Department and the Revenue Section under the Finance Department of Ghana Port and Harbours Authority (GPHA) were the target population for this study. The Operations Department provided information on the nature and types of cargo and vessels traffic; and cargo and vessels calls during the period 2005 to 2011; while the Revenue Section provided information on revenue generated during the same period.

3.3 DATA REQUIREMENT AND SOURCES OF DATA

Secondary data was used for this study. Data was collected from monthly and annual reports of the Operations Department, and annual revenue reports from the Revenue Section of the Finance Department all of GPHA. Journals, books, published and unpublished research papers on global economic recession and the operations of the maritime industry were other sources of data used for the study.
3.4 APPROACHES TO DATA COLLECTION

The researcher sought permission from the management of the Ghana Port and Harbours Authority, briefing them on the purpose of the study, and assuring them to use data collected for academic purpose only. After the approval was given, the researcher made two independent visits to the Operations Department, and Revenue Section of the Finance Department. During these visits, monthly and annual reports of the various departments were collected.

3.5 TECHNIQUES FOR DATA ANALYSIS

Both quantitative and qualitative analytical techniques were used to analyze data. This was necessary because some of the research questions and objectives required the use of descriptive analysis, trend analysis and estimations while others also required the combination of these analytical techniques. Annual reports of the GPHA during 2005 to 2011 were also qualitatively analyzed. Charts, graphs and frequency tables were used to present data findings.
CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.0 INTRODUCTION

This chapter discusses findings of the study using data from GPHA. The chapter explored the effect of the global financial crisis of the operations of the Tema Port. The chapter has been sectioned into five major sections. Section one presents the background of GPHA. Section two assessed the trend of cargo traffic to Tema Port between 2005 and 2011. Section three ascertained the nature and types of vessels call to the Port of Tema between 2005 and 2011. Section four of the chapter estimates the cost implications of cargo traffic and nature of vessels call on revenue generation.

4.1 BACKGROUND OF GHANA PORT AND HABOUR AUTHORITY

The Ghana Ports and Harbours Authority (GPHA) was established as a statutory corporation in June 1986, under P.N.D C. Law 160. The Ghana Ports and Harbors Authority thus became the legal successor of the then Ghana Cargo Handling Company (GCHC), Takoradi Lighterage Company (TLC) and Ghana Ports Authority (GPA) which merged to constitute the Ghana Ports and Harbours Authority (GPHA). The GPHA in this regard is responsible for all of the business of stevedoring, master portage and lighterage service; provide and maintain pilotage service and, generally, discharge any other functions which are necessary or incidental to the provision of adequate Port services.
The GPHA sought to create one corporate body to be responsible for the operation, management and administration of the Ports.

The Authority has the following statutory functions:

- Provide port facilities that are necessary for the efficient and proper operation of the port;

- Maintain the port facilities, extend and enlarge any such facilities as it shall deem fit;

- Regulate the use of any port facility

- Provide facilities for the transport, storage, warehousing, loading, unloading and sorting of goods passing through any port, and operate road haulage services for hire or reward;

- Carry on all the business of stevedoring, master pilotage and lighterage services; and

- Generally discharge any other functions which are necessary or incidental to the foregoing.
4.2 THE TREND OF CARGO TRAFFIC TO TEMA PORT BETWEEN 2005 AND 2011

This section assesses the trend of cargo traffic (volume of cargo that has passed through the port) and cargo throughput (volume of cargo handled in the port) to the port of Tema between 2005 and 2011. The section sought to answer the question “what is the trend of cargo traffic and cargo throughput between 2005 and 2011?” and how does the global economic recession affected cargo traffic and cargo throughput to the port of Tema. The section is subdivided into two: 4.2.1 takes a look at the annual cargo throughput to the Port and cargo throughput by commodity types during the period under study. Subsection 4.2.2 also explored the trend of cargo traffic to the port and cargo traffic by commodity types during the period under study.

4.2.1 THE TREND AND NATURE OF CARGO THROUGHPUT DURING THE PERIOD 2005 – 2011

The average annual cargo throughput between 2005 and 2011 was 9,116,582.58 (metric tonnes mt). During the period, the highest cargo throughput was 11,048,890 (metric tonnes-mt) recorded in 2011 while the lowest was 8,116,837 (mt) recorded in 2009. The effect of the economic recession on annual cargo throughput was not substantial during the period. The year 2008 was the peak of the economic recession and during this period cargo throughput was 9,025,528 mt which was relatively higher than throughputs in the previous two years thus 2006 and 2007 which recorded 8,499,073 mt and 8,568,569 mt respectively. The effect of the recession however reflected in the year 2009, where cargo throughput fell to 8,116,837 mt from 9,025,528 mt in 2008. The year 2010 and 2011
which were the early periods of global economic recovery and trade expansion recorded increased cargo throughput. Cargo throughput in 2010 was 9,031,295 mt while 2011 recorded 11,048,890 mt, the highest annual throughput for the period under study. The annual cargo throughputs are presented in Figure 4.1 below.

Figure 4.1: Annual cargo throughput between 2005 and 2011

Source: Data collected from GPHA, 2012
### Table 4.1: Cargo throughput by commodity group

<table>
<thead>
<tr>
<th>Description</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Bulk</td>
<td>2,802,518</td>
<td>1,425,024</td>
<td>1,173,204</td>
<td>988,754</td>
<td>571,576</td>
<td>740,707</td>
<td>657,597</td>
</tr>
<tr>
<td>Dry Bulk</td>
<td>1,103,538</td>
<td>1,239,555</td>
<td>1,287,050</td>
<td>1,369,101</td>
<td>1,227,827</td>
<td>1,628,975</td>
<td>2,000,455</td>
</tr>
<tr>
<td>Conventional</td>
<td>1,716,128</td>
<td>1,409,627</td>
<td>1,489,433</td>
<td>1,299,560</td>
<td>1,113,778</td>
<td>1,227,336</td>
<td>1,729,332</td>
</tr>
<tr>
<td>Containerised</td>
<td>3,651,853</td>
<td>4,220,404</td>
<td>4,410,815</td>
<td>4,759,549</td>
<td>4,549,303</td>
<td>5,171,114</td>
<td>6,439,160</td>
</tr>
<tr>
<td>Frozen Cargo</td>
<td>251,850</td>
<td>204,462</td>
<td>208,067</td>
<td>310,085</td>
<td>237,857</td>
<td>263,163</td>
<td>222,346</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,525,887</strong></td>
<td><strong>8,499,072</strong></td>
<td><strong>8,568,569</strong></td>
<td><strong>8,727,049</strong></td>
<td><strong>7,700,341</strong></td>
<td><strong>9,031,295</strong></td>
<td><strong>11,048,890</strong></td>
</tr>
</tbody>
</table>

Source: Ghana Ports and Harbours Authority, 2012

Table 4.1 above presents commodity groups and their annual contribution to the total cargo throughput during the period 2005 to 2011. Five major commodity group thus liquid bulk, dry bulk, conventional, containerized and frozen cargo can be identified.

From the table, containerized cargo throughput appeared to be the highest commodity throughput at the Tema Port during the period. In 2005, 3,651,853 mt of containerized cargo throughput was recorded; the figure had increased consistently throughout the period, and in 2011 a total of 6,439,160 mt was recorded. Liquid bulk (such as crude oil, vegetable oil) as shown in the table, decreased throughout the period. In 2005, 2,802,518 mt of liquid bulk throughput was recorded this however fell to 988,754 mt in 2008 and further to 571,576 mt in 2009 during the peak of the global economic crisis. This factor explains the price hike and shortages of fuel and liquefied petroleum gas (LPG) that characterized the Ghanaian economy during the year 2008 – 2010. Frozen cargo recorded the lowest throughput between 2005 and 2011. Average frozen cargo throughput estimated during the period was 242,547 mt.
Even though the observed effect of the economic recession on cargo throughput in Tema Port was not significant, data from Table 4.1 and the chart in Figure 4.2 below indicated that the effect of recession was mostly felt in 2009. Compared to the rest of the years, most commodity groups experienced relative fall in the year 2009. This supports the findings of Ackah et al (2009) and IMF (2010) that there was a general slowdown in global economic activities between the periods 2008 to 2009.

**Figure 4.2 Cargo throughputs by commodity type**

![Graph showing cargo throughputs by commodity type from 2005 to 2011.](image)

Source: Data collected from GPHA, 2012
4.2.2 Cargo Traffic to Tema Port between the period 2005 to 2011

Figure 4.3: Annual Cargo traffic to Tema Ports between 2005 and 2011

Figure 4.3 above presents annual cargo traffic to the Port of Tema between 2005 and 2011. From Figure (4.3), cargo traffic in 2009, which was recorded to be 7,406,490 mt has been the lowest during the period under study. After reaching the end in 2009, cargo traffic to the Port increased consistently in the year 2010 and 2011. In 2010, cargo traffic recorded at the Port was 8,696,951 mt, thus over 1,000,000 mt higher than the amount of cargo traffic in 2009. The year 2011 however recorded the highest amount of cargo traffic. Cargo traffic in 2011 was estimated to be 10,748,943 mt, which was over 3,000,000 mt higher than the amount recorded in 2009 and 2,100,000 mt higher than that of 2010. Even though the global economic recession started in the year 2007, peaked at
2008 and 2009 (Ackah et al, 2009), observation from the data presented above points out that, the effect of the economic recession on cargo traffic is quite substantial. This is because the amount of cargo traffic recorded during period prior to the economic recession particularly in 2005 was relatively higher from the amount recorded during the period of recession (thus 2007, 2008 and 2009). With the lowest amount of cargo traffic to the Port recorded in the year 2009, there is the temptation to conclude that the recession had effect on cargo traffic. This conclusion is debatable.

4.2.2.1 CARGO TRAFFIC BY COMMODITY GROUP

Table 4.2: Cargo traffic by commodity group

<table>
<thead>
<tr>
<th>Description</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Bulk</td>
<td>2,802,518</td>
<td>1,425,024</td>
<td>1,173,204</td>
<td>988,754</td>
<td>571,576</td>
<td>740,707</td>
<td>657,597</td>
</tr>
<tr>
<td>Dry Bulk</td>
<td>1,103,538</td>
<td>1,239,641</td>
<td>1,287,050</td>
<td>1,369,101</td>
<td>1,227,827</td>
<td>1,628,975</td>
<td>2,000,455</td>
</tr>
<tr>
<td>Conventional</td>
<td>1,710,120</td>
<td>1,404,587</td>
<td>1,486,206</td>
<td>1,299,560</td>
<td>1,093,619</td>
<td>1,220,892</td>
<td>1,720,430</td>
</tr>
<tr>
<td>Containerized</td>
<td>3,386,954</td>
<td>3,774,235</td>
<td>4,226,225</td>
<td>4,759,549</td>
<td>4,275,611</td>
<td>4,843,214</td>
<td>6,148,115</td>
</tr>
<tr>
<td>Frozen Cargo</td>
<td>246,847</td>
<td>203,436</td>
<td>205,997</td>
<td>310,085</td>
<td>237,857</td>
<td>263,163</td>
<td>222,346</td>
</tr>
<tr>
<td>Total</td>
<td>9,249,977</td>
<td>8,046,923</td>
<td>8,378,682</td>
<td>8,727,049</td>
<td>7,406,490</td>
<td>8,696,951</td>
<td>10,748,943</td>
</tr>
</tbody>
</table>

Source: GPHA, 2012

From table 4.2, five major types of commodities are traffic regularly through the Port of Tema. These commodity types include Liquid bulk (mainly crude oil both refined and unrefined), dry bulk (mainly iron ore, manganese, timber, etc), conventional cargo, containerized cargo and frozen foods.
Generally it can be observed from Table 4.2 that, compared to other years, cargo traffic of all the five major commodities declined in 2009. This implies that shipment of all the five major commodities to the Tema Port experienced a decline.

According the data presented, frozen cargo is the lowest cargo commodity traffic through the port during the period 2005 to 2011. The average amount of frozen cargo traffic during the period was recorded at 220,000 mt. Interestingly, the highest annual amount of frozen cargo during the period under study 310,085 mt was recorded in the peak of the economic recession 2008 while the lowest amount of frozen cargo traffic (thus 203436 mt) was recorded in the year 2006, a period prior to the global economic recession. This is implies that the contraction of increase of cargo traffic to the Port of Tema was dependent on the global economic recession.

Containerized cargo was the highest cargo that was traffic to the Port of Tema during the period 2005 and 2011. The highest containerized cargo traffic was recorded in 2011 (thus 6,148,115 mt) while the lowest was recorded in the year 2005 (thus 3386954 mt). Containerized cargo traffic during the periods of the global economic recession was 4,226,225 mt in 2007, 4,759,549 mt in 2008 and 4,275,611 mt in 2009. It can thus be observed that highest and the lowest amount of containerized cargo traffic was both recorded outside the period of global economic recession. While the economic recession was between the years 2007 to 2009, the least amount of containerized traffic was recorded in a period prior to the recession (2005) and the highest amount was recorded in 2011 (a post recession period). Figure 4.4 below presents a graphical picture of cargo traffic by commodity type during the period 2005 to 2011.

This section explores the nature and type of vessels call to the Port of Tema prior, during and after the global recession. The section sought to answer the research question “what has been the nature of vessels call to the Port of Tema between 2005 and 2011?” The section is subdivided into two: 4.3.1 explores the trend of total vessels call to the Port between the periods 2005 to 2011. Section 4.3.2 delved further into the various types of vessels calls during the period and the possible factors influencing the trend of vessels call.
4.3.1 VESSELS CALL AT TEMA PORT BETWEEN 2005 AND 2011

Figure 4.5 Total vessels call between 2005 - 2011

Total Vessels Call (2005 - 2011)

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call</td>
<td>1,642</td>
<td>1,994</td>
<td>1,671</td>
<td>1,568</td>
<td>1,631</td>
<td>1,787</td>
<td>1,667</td>
</tr>
</tbody>
</table>

Source: Author’s construct 2012, using data from GPHA

Figure 4.5 above presents the trend of total vessels call at the Port of Tema between the periods 2005 to 2011. From the trend presented above it can be observed that vessels call at the Tema Port declined during the period of the financial crisis (2007 - 2009) after increasing from 1642 in 2005 to 1994 in 2006. The year 2008 which was the peak of the economic recession recorded the lowest number of vessels call of 1568 during the period. This was followed by 1631 vessels call during 2009. The recovery of the global economy which started in 2010 also saw an increased in the number of vessels call. Total Vessels call in 2010 was 1787 (thus over 100 calls higher than the 2009 figure of 1631 and over 200 calls higher than the 2008 of 1568). During the period of recovery, international trade also increased resulting in an increased in the number of vessels call at the Port of Tema.
The number of vessels call however experienced a fall of about 100 vessels call in 2011 compared to the total number of calls in 2010 but that also could be explained by the sizes of vessels that called as bigger vessels with high loads means fewer vessels call especially where cargo traffic increased as indicated in Table 4.3.

4.3.2 Types of vessels call between 2005 and 2011

Table 4.3 Summary of vessel Types call between 2005 and 2011

<table>
<thead>
<tr>
<th>VESSEL TYPES</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>75</td>
<td>103</td>
<td>96</td>
<td>81</td>
<td>102</td>
<td>90</td>
<td>116</td>
</tr>
<tr>
<td>Roro</td>
<td>101</td>
<td>94</td>
<td>94</td>
<td>117</td>
<td>150</td>
<td>168</td>
<td>174</td>
</tr>
<tr>
<td>Container multipurpose</td>
<td>151</td>
<td>131</td>
<td>100</td>
<td>70</td>
<td>78</td>
<td>55</td>
<td>26</td>
</tr>
<tr>
<td>Cellular</td>
<td>440</td>
<td>551</td>
<td>560</td>
<td>610</td>
<td>641</td>
<td>765</td>
<td>647</td>
</tr>
<tr>
<td>Bulk carrier</td>
<td>130</td>
<td>98</td>
<td>106</td>
<td>119</td>
<td>119</td>
<td>130</td>
<td>178</td>
</tr>
<tr>
<td>Reefer</td>
<td>95</td>
<td>111</td>
<td>123</td>
<td>69</td>
<td>59</td>
<td>109</td>
<td>115</td>
</tr>
<tr>
<td>Tanker</td>
<td>148</td>
<td>123</td>
<td>129</td>
<td>140</td>
<td>131</td>
<td>132</td>
<td>110</td>
</tr>
<tr>
<td>Fish / Meat</td>
<td>221</td>
<td>184</td>
<td>167</td>
<td>179</td>
<td>182</td>
<td>206</td>
<td>149</td>
</tr>
<tr>
<td>Others</td>
<td>281</td>
<td>599</td>
<td>296</td>
<td>183</td>
<td>169</td>
<td>132</td>
<td>152</td>
</tr>
<tr>
<td>Total</td>
<td>1,642</td>
<td>1,994</td>
<td>1,671</td>
<td>1,568</td>
<td>1,631</td>
<td>1,787</td>
<td>1,667</td>
</tr>
</tbody>
</table>

Source: Data collected from GPHA, 2012

The types and traffic of vessels call between the periods 2005 to 2011 are presented in Table 4.3 above. Table 4.3 identified eight (8) major types of vessels call at the Port of Tema. These include conventional vessels, Roll-on Roll-off (RoRo), Container multipurpose vessels, bulk carriers, reefer, and fish/meat carriers.
There was however other vessels that also called to the Port. From the Table, Cellular Containers were the highest during the period under study. This was followed by fish/meat carriers.

4.4 THE COST IMPPLICATIONS OF CARGO TRAFFIC AND NATURE OF VESSELS CALL ON REVENUE GENERATION

This section explores the cost implication of cargo traffic and nature of vessels call on revenue generation between 2005 and 2011. The section is sub-divided into four parts, 4.4.1 discusses the annual revenue trend for the period 2005 to 2011; 4.4.2 ascertain revenue generated from vessels services and vessels facilities for the period while 4.4.3 discusses revenue generated from cargo services and cargo facilities. Sub-section 4.4.4 dwelled on the annual revenue generated from royalties during the period under study (2005 - 2011).
4.4.1 GENERAL REVENUE TREND FOR THE PERIOD 2005 TO 2011

Figure 4.6 Revenue trend for the period 2005 to 2011

![Annual Revenue Graph](image)

Source: GPHA account/revenue report 2005 – 2011

Figure 4.6 above presents a graphical trend of annual revenue generated at the Tema Port between the periods 2005 to 2011. From the figure, it can be observed that annual revenue generated between the periods 2005 to 2011 shows a general increasing trend with total revenue more than doubled between the periods. Total annual revenue generated at the Port of Tema increased from GHC 67,453,290 in 2005 to GHC 153,911,564 (an increase of about 228%) in 2011.

This finding is an indication that the global financial crisis did not have any effect on the Port of Tema in terms of Revenue Generation.
The increase in revenue during the financial crisis may however be due to other factors such as upward adjustment in some selected tariff items and the political turmoil/conflict in the La Cote D’voire during the 2008 and 2009 periods.

Looking at the data in table 4.2, even though there was a significant decline in the volume of cargo traffic in year 2009 that could be attributed to the recession, there was an increase in revenue at the same time as shown figure 4.6. This could be attributed to an upward adjustment to some selected items in the tariff.

The significant increase in year 2011 could also be attributed to another restructuring and upward adjustment in the tariff.

According to the Finance Department’s records, an upward adjustment between 15% - 25% could have made up for the fall in cargo traffic.

Again, studies conducted by the UNDP indicated that due to the conflict in La Cote D’voire, landlocked countries in the West African Sub-region diverted their sea trade routes to Ghana instead of Abidjan. This increased the number of cargos and vessels that transited at the Tema Port during the period.
4.4.2 REVENUE GENERATED FROM VESSELS SERVICES AND VESSELS FACILITIES BETWEEN 2005 AND 2011

This sub-section explores revenue generated from vessels facilities and vessels services at the Tema port. Sources of revenue generated for vessels facilities include Light dues, harbour rent and mooring and general port dues paid by the users of the port. Vessels services also include pilotage and tugs, stevedoring, and water and sundry. To make the analysis simple, the periods 2005 to 2011 has been categorized into three, thus 2005 - 2006 as period prior to the global economic recession; 2007 – 2009 as the period of global economic recession and 2010 – 2011 as period of global recovery. From Figure 4.7 below, it can be observed that revenue generated from vessels facilities were higher during the period of global recession (2007 - 2009) than revenue generated from vessels facilities in the periods prior to the recession (2005 - 2006). Revenue generated during the global recovery periods (2010 - 2011) were however fluctuating. In 2010 revenue generated from vessels facilities was GHc 43,559,190 the highest in the period under study. The year 2011 however experienced a sharp fall in revenue to GHc 14,228,742 which was about GHc 29,330,448 lower than the revenue generated from vessels facilities in 2010.
Figure 4.7 Revenue generated from vessels services and vessels facilities between 2005 and 2011

![Bar chart showing revenue generated from vessels services and vessels facilities between 2005 and 2011.](image)


Just like revenue generated from vessel facilities which increased consistently during the period of global economic recession (2007 to 2009), revenue generated from vessels services also has shown an upward increment during the period of global economic recession. The amounts generated were however lower than the revenue generated from vessel services prior to the economic recession (2005 to 2006) and revenue generated from vessel facilities during 2007 to 2009. The post recession period however experienced a phenomenal increased in revenue generated from vessel services. It increased to GHc 23,002,754 in 2010 from GHc 16,251,116 in 2009 and almost double of the 2009 amount to GHc 32,143,475 in 2011.
4.4.3 REVENUE GENERATED FROM CARGO SERVICES AND CARGO FACILITIES

This sub-section also explores revenue generated from cargo services and cargo facilities at the ports of Tema. Cargo services at the Tema Port include stevedoring, shore-handling, container handling, and hire of plants and equipment. Revenue generated from cargo facilities includes reefer charges, storage charges, port dues and the use of other port facilities.

Figure 4.8 below presents the data and bar chart on revenue generated from cargo services and cargo facilities at the Tema Port. From Figure 4.8 below, it can be observed that revenue generated from cargo services during the period 2005 to 2010 were relatively higher than revenue generated from the use of cargo facilities at the port of Tema. In 2005 cargo services yielded revenue of GHc 14,372,264 compared to GHc 9,760,519 revenue from the use of cargo facilities during the same period. Interestingly, revenue generated from both cargo services and cargo facilities were very low during the period of economic recession (2007 to 2009). In 2007, the contribution from cargo services fell from GHc 13,416,414 in 2006 to GHc 8,720,698, while that of cargo facilities also fell from GHc 10,576,097 in 2006 to GHc 8,563,136 in 2007. Revenue generation from cargo services and cargo facilities further declined during the peak of the recession to GHc 6,279,224 and GHc 4,609,919 in 2008 respectively. Revenue generated from both Cargo services and cargo facilities went all time low to GHc 1,840,455 and GHc 1,552,958 respectively. The post-recession period (2010 - 2011) experienced a relative increase in revenue from cargo services and facilities compared to the periods
2008 and 2009. In the year 2011, revenue from both cargo facilities and cargo services was recorded at GHc 58,761,544 and GHc 15,783,675 respectively. These amounts were the highest for the period under study.

Figure 4.8: Revenue generated from cargo services and cargo facilities

<table>
<thead>
<tr>
<th>Year</th>
<th>Cargo Facilities</th>
<th>Cargo Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>9,760,519</td>
<td>14,372,264</td>
</tr>
<tr>
<td>2006</td>
<td>10,576,097</td>
<td>13,416,414</td>
</tr>
<tr>
<td>2007</td>
<td>8,563,136</td>
<td>8,720,698</td>
</tr>
<tr>
<td>2008</td>
<td>4,604,919</td>
<td>6,279,224</td>
</tr>
<tr>
<td>2009</td>
<td>1,552,958</td>
<td>1,840,455</td>
</tr>
<tr>
<td>2010</td>
<td>4,163,155</td>
<td>7,972,912</td>
</tr>
<tr>
<td>2011</td>
<td>58,761,544</td>
<td>15,783,675</td>
</tr>
</tbody>
</table>

Source: Data from GPHA revenue report, 2005 – 2011

Aside the global financial recession, a key factor that accounted for the decline in revenue generated from cargo services and cargo facilities during the period 2007 and 2008 was the political conflict in La Cote d’ivoire. According to the UNDP (2009) many investors feared the crisis may spread to the other countries, and with Ghana being one of her immediate neighbors, investors may have diverted their sea trading activities to other parts of Africa and the world. Figure 4.9 below presents the trend of revenue generated from cargo facilities and cargo services during the periods 2005 to 2011.
4.4.4 ANNUAL REVENUE GENERATED FROM ROYALTIES BETWEEN 2005 AND 2011

Revenue generated from royalties (that is, the income generated from Private-Stevedoring Companies operating in the Port at a given time) during the period has shown an increasing trend. In 2005 royalties contributed 7,023,496 Ghana cedis to total revenue generated at the Port of Tema. The contributions of royalties in absolute term over quadruple by 2011 to 32,994,128 Ghana cedis. Figure 4.6 below presents the annual revenue generated from royalties.

Source: Revenue data from GPHA, 2012
Figure 4.10: Revenue generated from royalties between 2005 and 2011

Revenue from royalties between 2005 and 2011

<table>
<thead>
<tr>
<th>Amount in Ghs</th>
</tr>
</thead>
<tbody>
<tr>
<td>35,000,000</td>
</tr>
<tr>
<td>30,000,000</td>
</tr>
<tr>
<td>25,000,000</td>
</tr>
<tr>
<td>20,000,000</td>
</tr>
<tr>
<td>15,000,000</td>
</tr>
<tr>
<td>10,000,000</td>
</tr>
<tr>
<td>5,000,000</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,507,301</td>
<td>3,507,301</td>
<td>3,507,301</td>
<td>3,507,301</td>
<td>3,507,301</td>
<td>3,507,301</td>
<td>3,507,301</td>
</tr>
<tr>
<td></td>
<td>36,887,130</td>
<td>36,887,130</td>
<td>36,887,130</td>
<td>36,887,130</td>
<td>36,887,130</td>
<td>36,887,130</td>
<td>36,887,130</td>
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<tr>
<td></td>
<td>47,868,368</td>
<td>47,868,368</td>
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<td>47,868,368</td>
<td>47,868,368</td>
<td>47,868,368</td>
<td>47,868,368</td>
</tr>
<tr>
<td></td>
<td>7,023,498</td>
<td>7,023,498</td>
<td>7,023,498</td>
<td>7,023,498</td>
<td>7,023,498</td>
<td>7,023,498</td>
<td>7,023,498</td>
</tr>
</tbody>
</table>

Source: Data from GPHA revenue report

4.5 POSSIBLE FACTORS THAT INFLUENCES CARGO TRAFFIC AND VESSELS CALL TO THE TEMA PORT

This section sought to identify cargo traffic and vessels call to the Tema Port. Three key factors were identified (i) transit traffic at the Tema Port and their country of destination; (ii) political stability in Ghana and the West Africa sub-region; (iii) the discovery of crude oil in commercial quantities.
4.5.1 TRANSIT TRAFFIC AT THE PORT OF TEMA

The West African sub-region has three landlocked countries, thus Burkina Faso, Mali and Niger. These countries do not have access to the ocean, and therefore uses the coast of their neighboring countries to transport commodities.

Cargo traffic and vessels call reports and data from the Ghana Ports and Harbours Authority revealed that the Port of Tema is among the major Ports used by the landlocked countries as a transit point in the sub-region. Between the period 2005 and 2011 Burkina Faso had the highest transit traffic, followed by Mali and Niger. Table 4.5 and Figure 4.7 below presents data on transit traffic (in metric tonnes) at the Port of Tema by country of destination between 2005 and 2011. Other landlocked countries in Central Africa such as the Central African Republic and Chad also use the Port of Tema as transit points but not as frequent as those in West Africa.

Table 4.4 Transit traffic at Port of Tema by country of destination between 2005 and 2011

<table>
<thead>
<tr>
<th>country</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Faso</td>
<td>334,534</td>
<td>497,584</td>
<td>489,320</td>
<td>372,719</td>
<td>258,829</td>
<td>257,552</td>
<td>426,502</td>
</tr>
<tr>
<td>Mali</td>
<td>274,104</td>
<td>243,430</td>
<td>227,787</td>
<td>207,092</td>
<td>124,346</td>
<td>55,153</td>
<td>53,155</td>
</tr>
<tr>
<td>Niger</td>
<td>150,987</td>
<td>141,203</td>
<td>118,112</td>
<td>241,417</td>
<td>45,697</td>
<td>76,036</td>
<td>65,727</td>
</tr>
<tr>
<td>Others</td>
<td>7,856</td>
<td>5,373</td>
<td>8,437</td>
<td>42,124</td>
<td>80,252</td>
<td>58,329</td>
<td>68,694</td>
</tr>
<tr>
<td>Total</td>
<td>875,325</td>
<td>887,589</td>
<td>843,656</td>
<td>863,352</td>
<td>509,124</td>
<td>447,071</td>
<td>614,078</td>
</tr>
</tbody>
</table>

Source: Ghana Ports and Harbours Authority, 2012
An informal interaction with some workers and officials at the Tema Port clearly revealed some factors as determinants of Port usage by landlocked countries in West Africa. These factors are tax tariffs and Port facility user charges; road network, language, and security along roads on which goods are transported.

Tax tariffs and charges at the Tema Port are considered to be one of the lowest in the West Africa Sub region. The tariffs for transit cargos and vessels are said to be 30% lower than domestic cargo tariff. Cargoes and Vessels in transit also enjoy 21 days rent-free periods. These competitive taxes and charges give Ghana a competitive urge over many countries in the West African sub-region.
The security along the highways is also an essential factor, and with Ghana having a lot of security check point and highway patrols along its roads, the use of her Port facilities by landlocked countries is expected to increase.

A major barrier to the use of Tema Port as transit corridor by landlocked countries is language. All the landlocked countries in West Africa are French speaking countries. With Ghana being an English speaking country, investors from these countries who are unable to speak English find it difficult to communicate with officials and workers at Tema Port. As a result, most of these investors prefer to use Port facilities in francophone countries like Togo, Benin and Ivory Coast. However in recent times, workers and officials at the Tema Port are made to undertake French language training courses to improve upon their communication with French investors.

Road networks are among the key factors investors in landlocked countries put into consideration before using a port facility. Investors consider the nature and quality of road networks and whether they can support the ease and safeness of goods during transportation before deciding on Port facilities. In Ghana, the recent improvement in road networks such as the George Walker Bush Highway, the Accra – Kumasi and Kumasi – Sunyani roads, are likely to attract businesses from landlocked countries to use Tema Port as a point of transit.
4.5.2: POLITICAL STABILITY IN GHANA AND THE SUB-REGION

Political instability characterizing the West African sub-region in recent years particularly Cote D’voire, Niger and Mali have repercussion on the maritime industry in Ghana. Ghana shared boundary with Cote D’voire in the West, Burkina Faso in the north and Togo in the east. With Cote D’voire being one of Ghana’s immediate neighbours, the political instability had diverse effects on the Ghanaian maritime industry. These effects are both negative and positive while others are also difficult to quantify. For example, the instability in Côte d’Ivoire may increase the perceptions of political and economic risks in its neighbouring countries. This may deter foreign investors from investing in countries like Ghana because it shares boundary with a political unstable country and risk conflict escalation. This investor perception will indirectly affect the cargo traffic and vessels call to the Port of Tema and revenue generation of the maritime industry.

A direct positive effect of the political instability in Cote D’voire on the Port of Tema was the diversion of trade to the port by the landlocked countries in the sub-region. During the crisis in Cote D’voire investors in the landlocked countries Mali, Burkina Faso and Niger found it safe to use the Tema port as transit point. For instance, the onset of the crisis in 2002 induced Mali to divert its supply lines away from Côte D’Ivoire. The alternative route mostly use now is Lomé-Cotonou-Accra-Bamako (UNDP, 2011). This generates revenue in terms of fees taxes that have to be paid to the Ghana Ports and Harbours Authority.

Also, compared with other West African countries having port facilities; Ghana is regarded as the beacon of peace and political stability (Sithole, 2012; World Bank, 2011)
due to peaceful elections and transitions of power in the past two decades. As a result, landlocked investors will deem it safe to use Ghana as a point of transit when transporting their goods.

4.5.3: THE DISCOVERY OF CRUDE OIL IN COMMERCIAL QUANTITIES

The discovery of crude oil in commercial quantities in 2006 will be affecting cargo traffic and vessels call at the port of Tema. Ghana joined the league of oil producing countries when the country lifted her first oil from the Jubilee field in 2010. The oil exploration which is believed will continue for some years to come, is likely to increase particularly the traffic of liquid bulk cargo at the Port. Investment into oil related activities and businesses such as the building of petrochemical industries; natural gas industries, etc are also likely to increase the use of the Tema Port by investors.
CHAPTER FIVE: SUMMARY CONCLUSION AND RECOMMENDATION

5.0 INTRODUCTION

This chapter presents the conclusion of the study. The chapter is sectioned into two main parts. Section one (5.1) presents the summary of the study. The objectives and research questions of the study, methodology employed in data collection and analysis were summarized. The section further summarized the major findings of the study. Section two (5.2) of the chapter provides the conclusion and recommendation of the study.

5.1 SUMMARY

Empirical studies have shown that the global economic recession affected both developed and developing countries. A major effect of the recession was the contraction of international flow of goods and services. With sea trade (maritime industry) being a key player in international trade, several studies have been conducted particularly in Asia and European countries on the effect of the economic recession on the operations of national ports. Against this background and to contribute to empirical literature, this study was conducted to explore the effect of the global economic recession on the operations of the maritime industry in Ghana. The main objective of the study was to ascertain whether the global economic recession had any impact on Tema Port and its operational activities. Specifically the study sought to: assess the trend of cargo traffic to Tema Port between 2005 and 2011; ascertain the nature and types of vessels call to the port of Tema between
To address the main and specific objectives of the study, the study sought to answer the following research questions: what has been the trend of cargo traffic to Tema Port between 2005 and 2011?; what has been the nature of vessels call to the Port of Tema between 2005 and 2011?; and what are the effects of trend of cargo traffic and nature of vessels call on revenue generation between 2005 and 2011?

Secondary data collected from the Ghana Ports and Harbours Authority (GPHA) was the major source of data to address the study objectives and research questions. The data was collected from the cargo traffic and vessels call report between the period 2005 to 2011; and the revenue report for the same period. Data analysis was largely quantitative, with the researcher using trend analysis and descriptive statistics.

5.1.1 SUMMARY OF FINDINGS

The study made the following major findings:

- Average cargo throughput during the period 2005 – 2011 was estimated at 80,000,000 (mt). Cargo throughput recorded during the peak of the recession (2008) was 87,270,597 (mt), higher than the average annual throughput recorded during the period.
• Containerized cargo throughput was the highest commodity throughput at the Tema Port between 2005 and 2011 while frozen cargo recorded the lowest throughput during the same period.

• The year 2009 recorded the lowest cargo traffic while the highest cargo traffic was recorded in 2011. The amount of cargo recorded during the period prior to the recession (thus 2005 - 2006) is not significantly different from the amount recorded during the period of recession (2007 - 2009).

• Eight (8) major types of vessels call were identified at the Tema Port. They include: conventional vessels, cellular vessels, roll on – roll over vessels, multipurpose vessels, bulk carriers, reefer, fish/meat carriers.

• Compared to the periods prior to the recession (2005 - 2006) and the period after the recession (2010 - 2011), vessels call declined during the period of the financial crisis (2007 - 2009).

• Annual revenue generated increased throughout the period (2005 – 2011). Total revenue generated more than double between the period. It increased from GHc 67,453,290 in 2005 to GHc 153,911,564 in 2011, an increase of about 228%. There was no significant fall in revenue during the period of economic recession.
5.2 CONCLUSION AND RECOMMENDATION

Based on the findings, the study concludes that the global economic crisis had no significant effect on the operational activities of the Tema Port. The period under study was categorized into three: (i) period prior to the recession (2005 - 2009), (ii) period of recession (2007 - 2009), (iii) post of global recovery (2010 - 2011). Cargo traffic, cargo throughputs, vessels traffic and vessels call remained relatively stable throughout the entire period. Revenue generated during the period also more than doubled.

The political conflict in the Cote d’ivoire also led many of the West African Landlocked countries to use the Tema Port as point of transit during seaborne trade. They found Ghana safer when transporting their goods. This also contributed to the increased in revenue generated at the Port during the period in addition to the upward adjustment of the tariff around the same period. However, the conflict in Cote d’ivoire also scared potential investors from coming to trade in Ghana as they saw the West African region more volatile and prone to conflict. With Ghana being an immediate neighbour to Cote d’ivoire, investors may divert their trading activities to other parts of the world and Africa.

The study however recommended that in order for Port of Tema to stay competitive in the sub region, they may have to look at their rate of tariff increment especially now that the sub region is relatively peaceful to be able to attract more transit cargoes of the landlocked countries.
References


World Bank (2009) Swimming against the tide: How developing countries are coping with the crisis. Background paper prepared for the G20 Finance Ministers and Central Bank Governors Meeting. Horsham: United Kingdom
