



Munich Personal RePEc Archive

Shipping Market Financing: Special Features and the Impact of Basel III

Sambracos, Evangelos and Maniati, Marina

University of Piraeus, Department of Economics

1 October 2013

Online at <https://mpra.ub.uni-muenchen.de/51573/>

MPRA Paper No. 51573, posted 19 Nov 2013 14:41 UTC

Shipping Market Financing: Special Features and the Impact of Basel III

Evangelos Sambracos and Marina Maniati

*Department of Economics, University of Piraeus, 80 Karaoli & Dimitriou Str.
18534, Piraeus, Greece Email : sambra@unipi.gr*

Abstract

Shipping sector constitutes a sector with special characteristics that considerably differentiate it from the other sub-sectors of international transport. The maximisation of benefits for each one of the special market characteristics form a highly dynamic environment, with high risk of loss of invested capital. Within this framework, commercial banks, being the main source of financing shipping market, which is characterised by high capital and operating costs, have to take into account various variables in order to minimise the risk and maximise the return. The last is of particular importance considering the recent regulatory framework for banks applied by the Basel III, which has been elaborated on the grounds of inappropriateness of Basel II.

Key Words: Finance, Shipping Market, Basel, Risks

1. Introduction

In international transports, particularly in the shipping sector, which bears special characteristics that render it considerably different from all other international transports, maximizing the benefits arising from each of these characteristics forms a particularly dynamic environment with equally high risks of investment capital losses. In this context, the commercial banks, as the primary source of financing and of all resources necessary in a market characterized by high capital and operating costs, play a leading role, being at the same time required to evaluate a broad range of different parameters in order to limit the risk of lending on one hand and reaching an efficient risk - yield balance on the other. This becomes even more important when seen in the context of the latest international developments following the implementation of the Rules of Basel III, as a result of the ineffective implementation of the rules of Basel II.

Given that bank loans are primarily offered on the basis of an evaluation of freight markets and cash flows deriving from the operation of ships, which, during a certain period of time, allow for the efficient servicing of loans, this paper is primarily intended to provide an overview of the environment and the factors that have an impact on the banks' decisions to invest in the market and, accordingly, to assess positively or negatively a request for financing, always in the context of Basel II.

2. Shipping market features/ risks & literature review

Regardless of the type of goods transported, the shipping market is distinguished into four sub-markets (Stopford 1997) [1], namely the shipbuilding market, the freight market (commercial exploitation of ships), the sale and purchase market (S&P, second-hand ships) and the demolition market, where, depending on the strategic planning of the maritime company and the shipping market conditions prevailing from time to time, a ship (main asset) reaches the end of its life-cycle. These sub-markets are directly interrelated and any developments in one of them may have an impact on one or more of the others, e.g. an increase in freight rates is bound to affect both the S&P market and the shipbuilding market (Kavussanos and Alizadeh 2002) [2], given that supply actors have positive expectations of a further increase in demand and, by extension, of improved financial results in the industry. In implementing their investment plans (whether relating to shipbuilding or the purchase of second-hand ships), supply actors seek borrowing primarily from the banks, which in turn gain knowledge of the prevailing market conditions and assess any positive expectations extremely carefully, given the size of borrowing in the shipping sector, which is a capital-intensive market.

At the same time, given that the demand for available capacity emerges from and is almost exclusively perceived as a derivative demand in international commerce, shipping market analysis is essentially connected to the analysis of international commercial and industrial operations, which are served by the merchant shipping and their developments have a direct and decisive impact on the shipping industry and, by extension, on the banks' positive response in granting the necessary loan capital.

In assessing the special features of the shipping market, any developments in either the internal (four sub-markets) or the external environment (international economic developments, international commerce) of the shipping market contribute to the creation of the shipping cycles (Metaxas 1971 [3], Stopford 2009[4], Bijwaard and Knapp 2009 [5]), which are quite different in terms of both duration and periodicity. In particular, external factors relating to the structure of global economy may be positively or negatively limited to the demand for maritime transports, which is in turn reflected through positive or negative freight rate variations. These factors are classified in two basic categories (Zuellig 1942[6], Faust 1976[7]): i) Those caused by social forces, and ii) Those caused by natural forces.

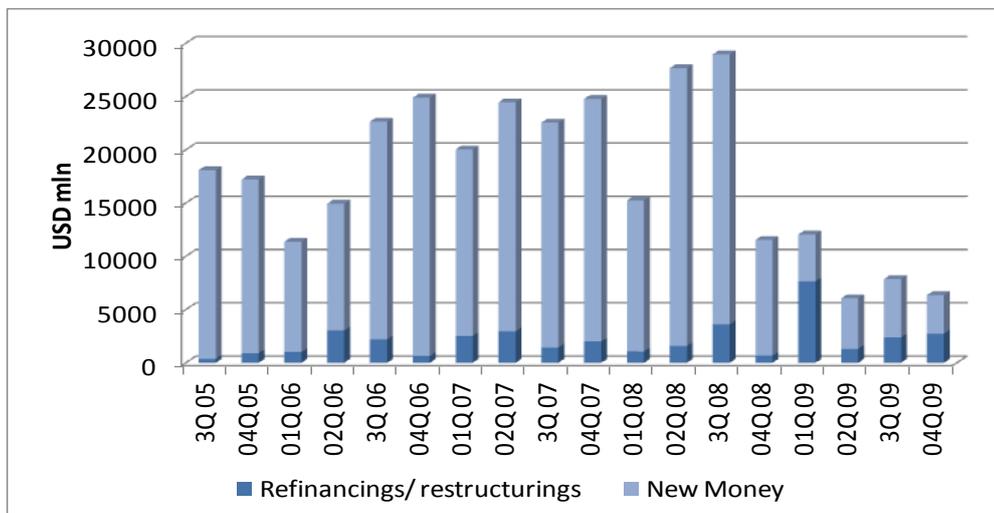
A study of international economic relations essentially involves political assessments, given that production factors present international mobility and shipping production is globalizing (Laos 2003 [8]). The demand for transportation services is affected by unforeseen developments in the international political environment. The French-German war in 1837, the economic crash in 1929, the Korean war in 1950, the Suez crisis in 1956, the Gulf War, the war in Iraq, the insurrection in the Arab world, particularly in Libya in 2010 - 2011 etc. have all had an impact on the supply and demand for maritime transports and, inevitably, on freight rates. At the same time, economic changes, particularly economic shocks, lead to a sharp increase in the demand for capacity on one part and to an excessive stand-still on the other. This in turn leads to extreme freight rate variations, which clearly shipping operators must take seriously into account as it has a direct impact on ship values.

In particular, at times when the shipping markets (freight markets) are flourishing, the prices of second-hand ships exceed by far the value of newly-built ships, given that unlike newly-built ships - which are delivered approximately two years after the order – second-hand ships are instantly available to serve demand. A typical example

was June – July 2008 (which holds the highest record in freight rates in the last ten years), when the prices of second-hand ships in the Handysize & Handymax category were two times higher than those of newly-built vessels. By contrast, in times of recession the values of both newly-built ships and second-hand ships drop dramatically. In December 2008, when there was a record low freight rates, the value of second-hand ships in the Handymax category dropped by 71.56% (on average) compared to the respective values in June - July 2008, whereas the respective reduction in the Handysize category was 70.89% (on average).

Fluctuations in freight rates and yields in the shipping markets naturally lead to a constant evaluation and re-evaluation of the investment and disinvestment in the industry, hence shifting liquidity, which in turn leads to a credit crunch. Today, shipping is in a slight credit crunch due to capital flight, in conjunction with the over-supply of available capacity, low yields and low yield expectations; as a result, investors and credit institutions show little interest in the shipping sector as they see limited potential of maximizing their yields to the benefit of their investors and shareholders. This is reflected also in the size of shipping financing which has been constantly dropping over the last years (Chart 1) [9], while a significant portion relates to re-financing of existing loans. In 2009, when the drop in the freight market caused a significant drop in the cash flows of maritime enterprises, the re-financing of existing syndicated loans reached 43.55% of total shipping financing.

Chart 1 - Volume of shipping financing (Syndicated loans, 2005 – 2009)



Source: Antoniou (2010)

3. Maritime Investment Evaluation Criteria: Heading Towards A Critical Risk Assessment Approach

The basic evaluation criteria of a maritime investment on the part of the banks are founded on the principle of the 5 Cs (Grammenos 2002) [10] which involves an assessment of the following parameters: a) Character & Capacity; b) Conditions; c) Capital; d) Collateral and e) Company. A variation of the 5 Cs theory is the 7 Cs credit theory which adds to the above the Credit History and Common Sense, which

either applies or not in cases where it is impossible to assess a parameter based on documentation or quantitative data.

On the part of financial institutions, there are three fundamental risk sources, which are evaluated in respect of each individual shipping market for an accurate assessment of the risks that banking institutions are required to handle when getting involved in shipping financing.

A. Credit Risk: Credit risk is a combination of four other individual risks [11]: Default risk, exposure risk, recovery risk and credit spread risk. The factors that determine and form the level of this risk in the shipping sector may include: The type of the investment (newly-built or second-hand ship, age and remaining life cycle, vessel type, fleet age based on the orders book, leverage features (cost of building/purchase price/market value, cash flow analysis, ship owner's capital participation and ship's merchantability).

B. Operating Risk: Operating risks and losses may arise as a result of organizational factors concerning the bank itself (deficient procedures) or the bank's productivity level which is formed by internal factors and is not affected by the shipping market, or as a result of fraud, employee errors, failure to effectively substantiate transactions or obtain proper internal authorization, failure to comply with regulatory requirements and business rules, equipment failures, natural disasters or external systems failures. (Panagiotis Chr. Aggelopoulos, 2005) [12]. The above definition includes also the legal risk. Legal risks may relate to individual terms and arrangements of the loan agreement, such as: the time schedule of payments, the type of installments (e.g. balloon payment, equal installments etc.), the loan profile, the age of the ship upon loan maturity, any collateral/guaranteed securities, any personal or corporate security, any provisions for the assignment of revenues or insurance claims, the loan pricing etc.

C. Market Risk: This term refers to the risk of changes occurring in the market factors and may comprise all imponderable factors arising from the daily variations in major market figures, such as: structure, tonnage dispersion, each asset's purchase conditions, freight market variability, the ship's employment/market conditions (spot trading, CoAs, Pool arrangements, time charter, Bareboat), risk of non-employment, the conditions and the relationship between second-hand and newly-built ships, freight rate variability, operating expenses etc.

The major risks relating to the particularities of the shipping market, which reflect all findings of the shipping market analysis, may be summarized as follows:

A. Market Risks:

1. Freight variability in short time periods (within a week)
2. Shifting towards purchases of ships of different capacity
3. Total income variability
4. Fuel price variability
5. Running costs variability
6. Geographic variations of freight in respect of ships of the same capacity
7. Locality of the supply/demand balance
8. Newly-built ship price variability
9. Second-hand / newly-built ship price variability in short periods of time
10. Asset (ships) price variability
11. Scrap price variability (determines the withdrawal of any excessive capacity, which affects the supply balance)
12. Variability due to technological developments / adjustments affecting operating or capital costs

13. Variability due to changes in the institutional framework, affecting the factors that determine operating costs

14. Financial risks and selection of loan currency

15. Loan interest rate variability

16. Exchange rate variability (particularly where loan payments and collections take place in different currencies)

17. Annual maintenance cost variability, in the context of the operational management policy applied by each ship owner

18. Market variability due to weather conditions

19. Market variability due to political developments

20. Market variability due to natural disasters

B. Credit Risks.

1. Counter party's solvency (default risk). This risk relates to all forms of default (technical, financial, failure to make interest or capital payments for a long period of time, etc).

2. Exposure Risk. This refers to the borrower's overall exposure to risk and his shipping portfolio diversification.

3. Recovery Risk. This refers to the level of security of the financial institution in case of default (or insolvency) of the borrower. This risk is particularly difficult to determine given that the prices of assets normally serving as security are constantly changing and depend on one or more market risks. This risk includes also the legal risks involved in the transaction procedure.

4. Credit Spread Risk. It relates to risks arising from the increase in credit spreads, especially in cases where a secondary market has developed and prices are constantly determined in terms of market values (mark to market).

5. Maintaining liquidity margins and applying cyclical /counter-cyclical policies (the tendency to follow the cycle or apply a mixed investment and disinvestment strategy)

6. The ship owner's policy as regards his participation in asset play practices or his orientation towards chartering and the operating yield of assets.

7. The ship owners' and ship managers' policy towards preserving general and instant liquidity and cash flows.

8. Ship owners' policy in terms of long-term borrowing potentials

9. Ship owners' policy in terms of financial leverage

10. Ship's yield and employment during one year.

11. Ship managers' policy as to the type of chartering applied (time charter, voyage charter etc.)

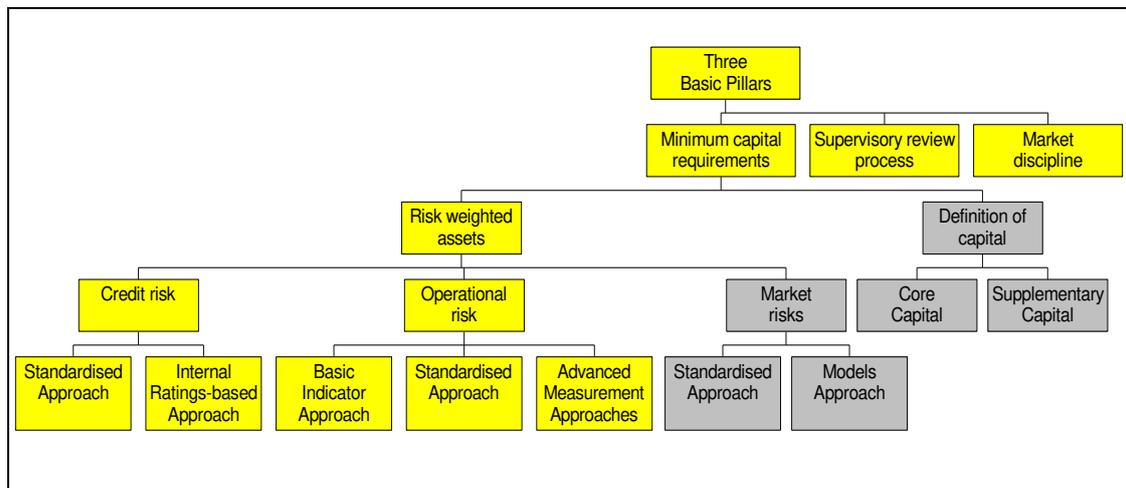
Below is an analysis of the restrictions imposed under the Basel Accord for a reduction of capital grants to sensitive sectors such as shipping, which are directly affected by financial developments and by the recession to an extent that satisfactory yield may not be insured at the lowest risk possible.

4. The "basel accord" as a factor determining bank criteria to provide shipping financing

The prevailing uncertainty and ever-changing physical and financial markets have forced investors to defend against continuous risks through a commonly acceptable framework of rules governing primarily the operations of banking institutions. In this context, the Basel Accord was drafted (by the Basel Committee) laying down

common rules with a view to ensuring the capital adequacy of banking institutions. The need for capital adequacy has led to the enforcement of relevant rules originally in 1988, and their subsequent amendment under the Basel Accord ("Basel I"). Considering, however, that this framework was incapable of providing the necessary level of security, it has lead inevitably to "Basel II", a set of even stricter rules on capital adequacy. Basel II consists of three pillars which are intended to ensure capital adequacy and through it the efficient operation and viability of the banking system. These three pillars are as follows (Figure 1) [11]: i) Pillar I - Minimum Capital Requirements; ii) Pillar II – Supervisory Review Process; iii) Pillar III - Market Discipline.

Figure 1 - Structure of "Basel II"



Source: Ping (2008)

Understanding the need for a readjustment of the rules of Basel II, the international regulators have introduced an amendment thereto (known as Basel III) which forces banking institutions to retain a larger amount of equity in order to deal with possible financial crises, whether due to poor customer selection (poor structuring and internal evaluation systems) or poor selection of financial products (e.g. government bonds of states facing the possibility of a bankruptcy). In particular, the improved review framework introduced under Basel III is based on the following two basic axes:

- First, controls are shifted to core Tier II from Tier I¹ which applied under Basel II. Under the new framework, banks shall not measure hybrid capital, preferred government securities, any good will arising from acquisitions they have performed and any minority holdings in non-banking organizations or the "net" deferred tax. All these parameters were taken into account to this date

¹ Core Tier I (Core Capital) consists primarily of shareholders' equity. It is the amount paid for the original purchase of shares (not the current quoted market value of the shares), any deferred income less any accrued losses. The Tier I capital is not inclusive of any "Goodwill". Core Tier II (Supplementary Capital) consists mainly of long-term subordinated loans and the fixed assets revaluation reserve (limited to 50% of the Tier I capital).

under the Tier I. Under Basel III however, *the only available means of recapitalization for the banks' balance sheets is the share capital and any balance sheet reserves, such as deferred income and reserves*. Core Tier I, which reflects top quality capital - non-allocated profits or shares - stands at 4.5% (from 2%), whereas the aggregate indicator Tier I was set at 6%, from 4% until recently. Moreover, banking institutions need to create a new separate "subsistence reserve" at a rate of 2.5%, consisting of ordinary shares. A "compensatory cushion" of 0.2% will be required under the new regulations, in case of extreme credit conditions. In conclusion, under Basel III, core Tier I must stand at 4.5%, while banks are required to maintain an additional 2.5%, which raises the bar to 7%.

- The second axis relates to the introduction of instruments to replace hybrid capital. In essence, this will help banks replace any hybrid capital issued with other financial instruments which protect their capital.

The new regulations are expected to enter effect gradually during the year (2013) and be fully enforced as of January 2015. The rules relating to the formation of the "subsistence reserve" will be gradually enforced from January 2016 until January 2019. Under the new requirements for a customized approach of financing components and policies (Basel II and III), every banking institution should evaluate both credit and operating-risk parameters and market risk parameters.

The set of upgraded rules introduced under the Basel Accord has raised concern in the shipping sector, as the Accord is intended to minimize recent risks whether relating to inefficient portfolios or otherwise, or even limit its exposure to particular sectors (such as the shipping and airline industries) and achieve a much improved capital adequacy in both qualitative and quantitative terms.

5. Conclusions

The restrictions imposed under Basel III are expected to exercise pressure on banking institutions towards applying complicated systems (insofar as no such systems are currently applied) to evaluate creditworthiness, credit risks and market risks, with a view to adopting their customized and personalized IRB approach (Internal Rating Based Approach for credit risk evaluation and Internal Modal Approach for market risk evaluation), in order to efficiently evaluate risks arising from their participation in the financing of industries, enterprises and of their loan portfolios in general.

For many banks which have been engaging in shipping financing until now this means higher costs or even higher risk or increased capital obligations, which makes them more reserved towards shipping financing. Moreover, capital pricing and the cost of capital in shipping financing are also expected to have a negative impact, as the costs arising from the customized monitoring of borrowers will be somehow compensated.

Furthermore, shipping portfolios (just like airline portfolios) are currently among the least attractive ones in the international financial system, owing to a number of reasons. One of the most important reasons relates to the term of financing duration. In the shipping industry the term of financing duration ranges on average from five to ten years in respect of banking institutions granting facilities up to \$30,000,000 - 40,000,000. It is noted that in the case of syndicated loans, the amount of the facility may reach \$500 million. This fact places the shipping industry at the center of the Net

Stable Funding Ratio (NSFR) in Basel III, which is one of the two liquidity indicators adopted under the Basel Accord that sets a minimum amount of standard financing in respect of each bank, based on the bank's yearly liquidity over assets. In conclusion, if a bank offers long-term loan facilities to its customers it must either ensure on a directly proportional long-term basis an increase in retail deposits or issue debt securities, which is currently considered to be extremely difficult. According to the information supplied by Dealogic, the above deficit has dropped from 1.3 trillion Dollars in 2009 to 906 billion Dollars in 2011.

As regards the ambit of the Rules and commitments of Basel III, a positive aspect is that it does not alter the concept of shipping financing in its entirety, but merely the part thereof relating to banking. Hence, non-traditional interested investors are expected to find fertile ground for investments and substantial opportunities for competitive operations. The leverage already offered to the Greek ship owners - through state support and encouragement - by shipbuilding undertakings in China, Japan and Korea with a view to undertaking the management of the excessive capacity, is substantially positive, despite the adverse financial conditions currently prevailing in the form of freight markets recession and over-supply of capacity.

It should be noted that a major source of dispute among the banking institutions which have become involved in the financing of shipping enterprises and preserve significant portfolios, is the restructuring of shipping loan facilities. The methodology applied by any banks which have adopted the IRB approach in the context of Basel II, regardless of whether a specific exposure falls under the category of corporate loans or special loans, must be reviewed and presented to the borrowers as it is bound to have a (basically negative) impact upon them, while they have never been offered the opportunity to express their views on the banks' methodologies. Under the Basel II and the IRB approach, the lending banks will introduce the elements of subjectivity and personalization which may be disputed, while at the same time banks will seek to limit their accountability and transparency in terms of methodologies applied.

The increased cost clause, which in many cases remains ineffective to this date, is expected to raise concern among the contracting parties and generate a number of legal issues. The basic challenge that both creditors and borrowers will be (already are) required to deal with in the near future is understanding the conditions under which the parties are forced to continue their operations. Of course, there is the possibility of withdrawals from the banking sector (significant portfolios have already withdrawn until now) to the benefit of Asian state economies which offer an alternative approach to the global shipping industry. If the banking sector is unwilling to lose the shipping sector, which, even though at times turned out to be disastrous for the banking institutions, has generated significant yields at other times, then a framework must be in place for consultation on the contents, structure and components of credit risk and market risk evaluation in the shipping industry.

The ship owners on the other hand, who are not thoroughly aware of the exact consequences to arise from the implementation of Basel II and Basel III, must be prepared for a long-term change of strategy in the banking sector as far as shipping financing is concerned, primarily as regards the banks' willingness to provide financing as well as the terms and conditions of such financing. An increase in borrowing in the near future must be taken for granted, even if the aforementioned stakeholders (China, Japan, Korea) promise a satisfactory leverage of approx. 70% and substantially higher interest rates, of approx. 4.5%.

References

- Aggelopoulos Chr. P. (2008), "The Banks and the Financial System, Markets - Products - Risks", Athens, 2nd ed., "Stamoulis" Editions.
- Antoniou H. (2010) "The New Normal in Shipping Finance", Capital Link Greek Shipping Forum 2010, 23 February 2010
- Bijwaard G.E, Knapp S. (2009) "Analysis of ship life cycles—The impact of economic cycles and ship inspections", *Marine Policy*, 33, pp. 350–369
- Faust P. (1976), "The influence of Exogenous Factors on freight rate development", Institute of Shipping Economics, Bremen, pp. 4-5
- Grammenos C.Th. (2002) "Credit Risks, Analysis and Policy in Bank Shipping Finance", *The Handbook of Maritime Economics and Business, LLP*, Chapter 32, pp. 734.
- Kalfaoglou F. (2001) *General Banks Overview*, Bank of Greece, 2001.
- Kavussanos M.G. & Alizadeh A.H. (2002) "Efficient pricing of ships in the dry bulk sector of the shipping industry", *Maritime Policy and Management*, Vol. 29, No 3, p.312.
- Laos N. (2003) "Financial Engineering", Diavlos Editions, p. 23.
- Metaxas B.N. (1971) "The economics of tramp shipping", Athlone Press (London), pp. 37 & 189-190
- Ping L. (2008) "Basel II overview and its implications for emerging markets", APEC seminar, Shanghai, Dec 8
- Stopford M. (1997) "Maritime Economics, 2nd Edition", Sterling/ Routledge, p.78.
- Stopford M. (2009) "Maritime Economics", 3rd edition, London, Routledge, p.140
- Zuellig S. (1942) "Die Seefrachten, 1920-1938", H. Girsberger ; Zürich, pp.140