

## International Shipping Center Affiliated with the International Financial Center Review

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### Abstract

*This article expands the international shipping center and an international financial center affiliated overview from the theoretical and empirical aspects. Theoretical research ideas first from abroad context collated to shipping finance business, such as ship finance leases, shipping insurance, shipping and other aspects of financial derivatives innovation summarized. Empirical research methods include input-output analysis, principal component analysis, gray correlation analysis, co integration studies.*

**Keywords:** an international shipping center: International Financial Center: association

### Introduction

With the shipping industry, industrial upgrading and structural constantly adjust and improve, continue to strengthen the various shipping services, shipping finance industry have also developed. London, New York and Singapore are not only the world famous international shipping center, but also an international financial center. Visible, an international shipping center and an international financial center exist natural link. The double center of the building is a modern financial center to integrate international shipping resource allocation capabilities concentrated expression of the high concentration of shipping finance resources, service functions and improve the market environment excellent epitomizes the promotion of international trade and the dominant factor in the development of export-oriented economy.

Early theoretical studies on the shipping center or major financial centers are single analysis, including their mode of formation, conditions, indicators of competitiveness, and shipping center or financial centers were ranked, there is no relationship between the two prominent researches. The theory is generally felt that the late shipping center and financial center have a strong correlation, one part from a theoretical perspective of the relationship, including from shipping finance business, such as ship finance leasing, shipping insurance, shipping, financial derivatives innovation, research, demonstration shipping center and financial center of the association. Another part of the study from an empirical point of view the relationship between the two, including the shipping center and financial center Relations Institute of classification analysis using methods such as input-output analysis, principal component analysis, gray correlation analysis, co integration studies. This study was supported by qualitative analysis shipping center and financial center of the relationships, the development of a model to study the quantitative relationship between the two, and to aid analysis and appraisal of evidence in order to be better able to push each other shipping and finance role theory to the actual construction of shipping finance center to go.

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### ***From a Theoretical Point of View of the Relationship between the Shipping and Finance***

Currently, the relationship between the two studies is in continuous improvement, development stage, and gradually by the academic attention. Firstly, from a theoretical point of view of domestic and international shipping center and financial center of the relationship, and secondly from the point of view of shipping finance business relationship between the two, including a finance lease from the ship's perspective and from the perspective of shipping insurance, financial derivatives from the shipping perspective of innovation shipping center and financial center of the association. Analysis of international shipping center and financial center of the association is to build a strong support for an international shipping center.

### ***Theoretical Analysis of Domestic and International Shipping and Financial Relations***

The earliest theoretical study abroad shipping and financial relations are Emery, he pointed out that the emergence of a large number of banks can enhance the attractiveness of a region, which is the financial center of attraction for international shipping earlier theoretical basis; Murgler cleared that the financial market development to improve the efficiency of capital allocation, it is the first time to emphasis on the importance of financial markets in the shipping industry in the allocation of capital. The role of international financial center and shipping center of capital is closely related to the shipping industry which is a capital intensive industry, with a huge amount of investment required, and long payback period, financial sector development can play a role in financial investment and financing in the maritime, for the shipping industry, in order to provide capital protection for domestic scholars, to study the relationship between the two has a certain reference.

Major study in a foreign country on the basis of the theory of the development of an extension, retention international shipping center construction finance to promote the theory of the formation of an international shipping center from the starting conditions analyzed, and shipping center to study different models, stressing that the financial industry in the shipping center construction has an important role. International shipping center must have financial support and mature developed the shipping market, and developed the shipping market, well-developed financial and insurance industries, perfect service, high-quality human resources is the construction of Shanghai international shipping center soft environment strategic focus; the developed financial industry is building an international shipping center, strong support, to improve the financial service system is to ensure that international shipping center, and efficient operation of the main factors; want to be shipping center, financial ecological soft environment optimization is particularly important, and improvement and development of financial ecological soft environment, especially should take financial services as a top priority shipping ( Sun Guang qi , 2005 ; Gan Aiping <sup>[1]</sup> , 2010 ) .

Mode of international shipping center is constantly moving forward, the shipping finance has to strengthen the status of an important international shipping center power, after the transformation of the shipping, processing and value-added , integrated resource allocation model , the international shipping center is the fourth generation Smart grid development of low-carbon and efficient financial services to the shipping capacity has become the fourth generation of the essential elements of an international shipping center ( Xiang Mei, 2011; Feng Duo <sup>[2]</sup> , 2012 ) . Studying theoretically two-center interactions has some effects, but the shipping and finance specific business research need to be further extended for future study provides a good starting point .

### ***From the Shipping Finance, Shipping and Financial Business Analyst Relations***

From shipping finance to analyze the specific business relationship between the two studies, deepens pure research to make the relationship between the two more specific. From the shipping industry characteristics and financial products for the commercial banks and the shipping industry needs analysis the close link between the financial sector, well-developed financial markets are shipping high-end service-oriented sign of an international shipping center, an international shipping center construction needs financial support measures to build shipping finance services, parks, small shipping companies to support the implementation plan. Shipping and financial relations embodied in the shipping industry ship financial leasing , shipping the goods, marine insurance, shipping finance innovations arising from derivatives and so on.

● From the perspective of ship finance leases

Shipping industry is a capital-intensive, high risk industry, shipping industry needs to continue to raise funds to develop and grow their own, mainly from the different modes of finance leases, different business, financing risks three aspects to analyze ship finance leases.

Ship financial leasing has a different mode of development, including the German fund model, the UK tax leasing model, the Norwegian market, the new trust fund CCLEC things, ship -owned leasing is financing the shipping industry in one, must be combined with the development of national shipping industry actual situation, to choose their own mode of finance leases.

By combining different services such as finance leases direct leasing, leaseback, leveraged leasing, will ship investment appraisal techniques and decision-making methods applied to the combination of investment and financing decisions ship analysis , played a finance lease timely, full and high efficiency , solve our shipping corporate fund and tax issues (Shao Ruiqing<sup>[3]</sup> , 2003 ; Song Lianwei , 2011 ) .

Ship finance lease financing risk also exists in the NPV model, based on the introduction of multi- objective investment decision model is proposed by industry associations set up specialized financing institutions to resolve difficulties in financing shipbuilding program , the gray theory and analytic hierarchy France integrate , establish risk aversion model and the shipping industry financing risks were evaluated. Grey Theory and AHP analysis of empirical research in the future play an important role.

● From shipping insurance functions to analyze

Shipping insurance compensation for economic losses not only play with the payment, Loss Prevention, such as the role of risk diversification, but also in the accident fund chain convergence, investment insurance and other aspects of financial functions. Shipping insurance in the shipping industry plays an important role in the development process.

Marine insurance and international shipping center and an international financial center mutual relationship is: marine insurance center has to become an international shipping center premise, an international shipping center has to become an international financial center premise, marine insurance is an international shipping center in the strong support of the soft environment an important symbol (Wang Chuanxu<sup>[4]</sup>. 1997; XU Weishan, 2003).

Shipping insurance is an important pillar of shipping finance, from product innovation, skills upgrading, intensive, win-win cooperation, and service-oriented and other strategic initiatives to enhance the overall strength of the shipping insurance ( He Huizhen, 2010 ) . Shipping insurance in the shipping industry's important role as future empirical research studies shipping and financial relations is an important indicato.

● Shipping financial derivatives innovative research

Freight shipping companies, faced with price fluctuations, fuel price fluctuations, exchange rate fluctuations, such as multiple risks to hedge these risks, shipping born out of derivative financial instruments, there are three main categories; shipping price derivatives, fuel oil price derivatives, exchange rate derivatives, including derivatives freight prices most rapid development. Dry bulk shipping market freight index option pricing model studies from the real option, freight rate derivatives, weather derivatives pricing, and Asian option model development process.

1995 Bjerksund<sup>[5]</sup> and Ekem first through real options approach to evaluate the options in the shipping market; 1998 Tveed<sup>[6]</sup> though the Baltic freight futures BIFFEX established based on option pricing model and give the market a major shipping rates feature, namely affected by supply and demand, freight rates always mean reversion would like to make his feature option model differs from the model; 2004 Fred Espen Benth<sup>[7]</sup> derived using the Levy hypothesis with mean reversion process characteristics arising from changes due to temperature weather derivatives option pricing model, and apply the Norwegian option pricing weather derivatives and achieved good results are ; 2005 Foeckbkker mathematically established Asian option models are currently shipping freight option pricing model development latest results. Shipping financial derivatives financial innovation capacity regarded as international shipping center strength is an important basis.

### ***From an Empirical Point of View of the Relationship between the Shipping and Finance***

Theoretically shipping and financial center of the association has achieved very significant results, academia generally considered shipping center and financial center in theory there is a certain relationship, based on the theoretical relationship will be applied to the actual international shipping finance Center building in order to examine, through empirical research to further illustrate the relationships shipping and finance, empirical analysis methods include: input-output analysis, principal component analysis, gray correlation analysis, cointegration analysis.

#### **Input-Output Analysis**

Input-output method is the use of inputs and outputs to analyze the relationships between selected variables associated with the degree, the use of input-output method 2002 Shanghai 131 sector input-output table analysis, the 2002 Shanghai Financial Insurance owners want to feed through to the shipping industry association occurs, is the relationship prior to the shipping industry needs to consume the financial industry and the insurance industry output, finance and insurance needs of the shipping industry 's output few conclusions ( Han Qian <sup>[8]</sup>, 2006 ).

Since the conclusion of this approach is the financial industry and the insurance industry to the needs of the shipping industry and the theoretical conclusions rarely finance and insurance industry is the development of the shipping industry support force inconsistent, so the latter part of the empirical research, this methods are very little, but this is the first use of quantitative analysis to illustrate the relationship between, the subsequent quantitative analysis has some inspiration.

#### **Principal Component Analysis**

Theoretically use the shipping and financial linkages between the shipping and financial center from the evaluation index, starting from the qualitative aspects of shipping center and financial center not only that there is a direct link capital markets shipping industry, shipping industry, settlement, but also there is an indirect contact the two centers and regional economic interaction, two centers and regional level of international interaction. From the quantitative aspects of research, using principal component analysis Shanghai dual- center construction, the results show the existence of correlation between the two.

Shanghai international financial center of each indicator to the international shipping center relevance rank order: level of financial development, international finance and financial markets, the level of the soft environment. Shanghai international shipping center, the indicators of the international financial center relevance rank order: collection and distribution capabilities, economic hinterland, the port production technology and shipping market soft environment. This sort of international shipping center and international financial center is constructive, but did not calculate the correlation index weights (Zhuhui <sup>[9]</sup>, 2008). For the latter index selection and weighting have certain significance.

#### **Grey Relational Analysis**

The financial industry and the shipping industry are the mutual influence of theorists a major topic of concern, both in the industry have great relevance, in an established international shipping center and international financial centers on the basis of index system, mainly through the selection different variables, industry association perspective two aspects to analyze.

Output from the financial, shipping GDP, economic development level three aspects to analyze shipping center and financial center of the association between the use of gray correlation to analyze the relationship between the three gray, obtained the degree of financial impact on shipping greater than the impact of shipping on the extent of the financial conclusions (ShenJun, HuHao <sup>[10]</sup>, 2009). This is basically consistent with the reality, that the degree of interaction between shipping and financial relations between the two but did not indicate how it affects.

On the Shanghai shipping industry and the development of the financial industry interaction analysis, the development of the financial sector of the shipping industry 's influence over the shipping industry a greater development of the financial sector, and the use of gray relational analysis method to calculate the financial industry in Shanghai and the Shanghai shipping industry mutual the degree of impact, as well as the impact of various factors on both the situation, from the industrial point of view very good exposition related shipping and finance association (Tao Huimin <sup>[11]</sup>, 2011).

These conclusions are in the actual process of building an international shipping center may play a role in guiding the extent; however, have to be analyzed according to the actual situation, its feasibility, and enforceability assessed.

### **Cointegration Analysis**

Primarily through selected special cases such as London, Rotterdam, Shanghai and other shipping center to analyze the relationships and financial center, from London, Rotterdam and other international shipping center development patterns and factors influencing departure, based on cointegration model to investigate the economic growth and international scale of capital flows on the evolution of maritime center of London 's long-term and short-term dynamic effects mechanism drawn international shipping center of London is mainly affected by the level of economic development and international capital flows and other factors affect the conclusions.

The reform and opening up 30 years Shanghai related industries econometric analysis of historical data, using co integration and Granger causality test, in the short term, shipping is the extent of the financial Granger cause greater; while the long term finance is shipping Granger cause a greater extent (Reng Shengce, Song Bingliang<sup>[12]</sup>, 2010) This study concluded the actual construction of an international shipping center has significant reference.

Through specific cases to analyze the relationship is feasible and authenticity, to a certain extent the theoretical relationship will be tested by empirical, but the selected case is not universal, it is necessary in the future selected case studies must have universal representation, so as to better demonstrate the fusion of shipping and finance , interaction and push each relationship .

### ***The International Shipping Center and Financial Center Affiliated Research Summary and Outlook***

International shipping center and an international financial center association study was obtained through theoretical and empirical, that is the world's leading shipping and financial center - London for analysis, London shipping market is developed other related measures for support, there is shipping finance, shipping and insurance, perfect service and high quality human resources are its shipping center in the soft environment of strategic focus. Financial instruments and thus to emphasize that marine insurance, ship finance, financial derivatives and other innovations in the shipping an active role in the development process, through the actual data for quantitative analysis, sectoral input-output analysis, gray correlation analysis, principal component analysis, co- analysis of the entire international shipping center and financial center of the intrinsic link the short term, shipping promote financial development in the long run, to promote the development of shipping finance .

Documents can be obtained from the existing knowledge, shipping center and financial center in the theoretical study of the existence of mutually reinforcing and mutually reinforcing effect between the two there is a clear correlation, but the two-center in Shanghai is facing the task of building the same time, Shanghai international shipping center and an international financial center status has not carried out simultaneously, there is a big difference between the two and uncoordinated development trend, this shipping and financial integration in theory , but in practice the phenomenon of split two-center is not conducive to the task of building Shanghai smoothly. This requires further research shipping center and financial center of the association should seek theoretical and practical suit , seeking qualitative indicators of rationality and comprehensiveness, quantitative research methods to be updated at the selected time series should be some extended in order to respond better to smooth relations between the two , in offshore finance, insurance and reinsurance , shipping high-end financial services, and other aspects of low-carbon Smart grid shipping and finance further research relationship .

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