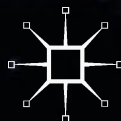


Edited by
MANOLIS G. KAVUSSANOS
and ILIAS D. VISVIKIS

THE INTERNATIONAL HANDBOOK OF SHIPPING FINANCE

THEORY AND PRACTICE



The International Handbook of Shipping Finance

Manolis G. Kavussanos • Ilias D. Visvikis
Editors

The International Handbook of Shipping Finance

Theory and Practice

palgrave
macmillan

Editors

Manolis G. Kavussanos
Athens University of Economics and Business
Athens, Greece
e-mail: mkavus@aub.gr

Ilias D. Visvikis
World Maritime University
Malmö, Sweden
e-mail: iv@wmu.se

ISBN 978-1-137-46545-0 ISBN 978-1-137-46546-7 (eBook)
DOI 10.1057/978-1-137-46546-7

Library of Congress Control Number: 2016957773

© The Editor(s) (if applicable) and The Author(s) 2016

The author(s) has/have asserted their right(s) to be identified as the author(s) of this work in accordance with the Copyright, Design and Patents Act 1988.

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, , trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Macmillan Publishers Ltd. London
The registered company address is: The Campus, 4 Crinan Street, London, N1 9XW, United Kingdom

About the Editors

Manolis G. Kavussanos is Professor at the Athens University of Economics and Business (AUEB), Greece. He is the director of the MSc program in International Shipping, Finance and Management and of the Laboratory for Finance since their inception. He is also a member of the steering committees of the MSc program in Accounting and Finance, of the Athens MBA program, and was for five years the director of the MSc and PhD programs in Accounting and Finance at AUEB. He holds a BSc and an MSc (Economics) from the University of London and a PhD (Applied Economics) from City University Cass Business School (Cass), London. He launched and directed, until he joined AUEB, the MSc in Trade, Logistics and Finance at Cass. He has held various posts as professor of finance and shipping in universities in more than eight countries around the globe, such as the UK, France, The Netherlands, Belgium, Italy, Singapore, China, Greece and Cyprus. He has provided consultancy and executive training services in finance and shipping to private companies and public sector national and international organizations, has been a member of international committees for the evaluation of academic programs in tertiary academic institutions and for the award of prestigious prizes and research funding. Professor Kavussanos has written extensively in the areas of finance, shipping and applied economics, and is the author of numerous academic papers published in top international refereed journals, in conference proceedings and in books. He is a member of the editorial board on a number of international scientific journals. His work has been presented in international conferences and professional meetings around the world, gaining awards for its quality, financed by both public (e.g. European Community) and private sector organizations, companies and foundations (e.g. the Propontis Foundation) and cited extensively by other

researchers in the area. Since 1992 he has worked in developing the area of risk analysis and management in shipping and is the co-author of three books in this area.

Ilias D. Visvikis is Professor of Shipping Finance and Risk Management, and Director of Executive Education and Professional Development at the World Maritime University (WMU) in Malmö (Sweden), founded by the International Maritime Organization, a specialized agency of the United Nations. He is Co-Director of the Postgraduate Diploma in Executive Maritime Management, jointly delivered by WMU and the DNV GL Maritime Academy. He is a Visiting Professor at the ICMA Centre—Henley Business School of the University of Reading (UK). He has previously held academic appointments at the ALBA Graduate Business School at the American College of Greece, having the position of Associate Professor and Academic Director of its shipping programmes. He has taught (either at BSc, MSc and MBA levels) in several universities around the world, including Sweden, the United Kingdom, the Netherlands, Belgium, China, Germany, Greece and Cyprus, while he has extensive international experience in consultancy and executive education. He has trained managerial-level maritime professionals in the areas of shipping finance and shipping freight derivatives from numerous companies around the world. At the same time, he has designed and directed postgraduate academic programmes (MSc and MBA) and also directed and coordinated professional development courses delivered in Asia, Europe and Africa. His research work has been published in international refereed scientific journals, books and magazines. He has extensively presented his work in international academic and business conferences held in the USA, Europe and Asia. He serves as an editorial board member of several scientific journals, and has served as a member of conference steering committees and as a reviewer for several scientific journals. He holds a degree in Business Administration from the University of the Aegean (Greece), an MSc in International Financial Markets from the University of Southampton, an MSc in International Shipping from the University of Plymouth, and a PhD in Finance from the Cass Business School of City University in London.

Book Chapter Reviewers

The editors would like to thank sincerely the following chapter reviewers for their commitment and support in providing constructive comments and feedback to the book contributors.

Basil Karatzas	Karatzas Marine Advisors & Co.
Cecilie Lind	Jefferies LLC
George Theocharidis	World Maritime University
Simon Norton	Cardiff Business School
Fotis Giannakoulis	Morgan Stanley
Henriette Brent-Petersen	DVB Bank SE
Ioannis Alexopoulos	Eurofin Group
Lars Patterson	Pacomarine Ltd.
Wolfgang Drobetz	University of Hamburg
Marc Huybrechts	University of Antwerp
Photis Panayides	Cyprus University of Technology
Siri Strandenes	NHH—Norwegian School of Economics
Ron Crean	IHS Maritime & Trade
Ted Petropoulos	Petrofin
Tony Foster	Marine Capital Ltd.

Special thanks are due to Stella Moysiadou for her diligent reading and feedback on all chapters, which helped improve the presentation and explanation of the concepts.

Preface

Following the financial collapse of 2008, the financing of shipping activities and the financial management of maritime enterprises have become extremely important for the performance and ultimately the survival of shipping companies around the world.

The current handbook provides a balanced blend between the theory and practice of shipping finance. It comprises a series of chapters, written by leading expert practitioners and academics in the field, discussing the best practices in the area. Chapter contributors represent different market segments involved in shipping finance. These include shipping companies, charterers, banks, consultants, traders, financiers, maritime lawyers and academics, among others. Thus, individual chapters in the book cover the different aspects of shipping finance, offering to the reader a spherical view of the relevant issues in this area.

This comprehensive handbook is of great value to both shipping practitioners and the academic community, as it contributes to the training and education of market participants, academics and students and, as such, is a must-read for everyone already involved or likely to be involved in the maritime industry. It offers to its readers a rigorous understanding of the different aspects of modern shipping finance, financial management and investment, the various characteristics of the available products, the capital needs and requirements, and a clear view on the different financial management strategies through a series of practical examples and applications. It can be used as the main reference point for companies and organizations involved in shipping finance, and as a teaching and reference textbook in both undergraduate and postgraduate maritime programs in universities worldwide.

The handbook comprises 16 chapters. **Chapter 1**, “Shipping Markets and their Economic Drivers”, is written by Jan-Henrik Hübner of DNV GL, and

serves as an introduction to the shipping industry and its various markets. He considers current developments and trends in shipping sub-markets, and analyses the economic factors that influence them. More specifically, the chapter starts by presenting the various “players” in the ship transportation value chain; that is, shipowners, shipyards, charterers, cargo owners, freight forwarders, ship managers and shipbrokers. It presents the various markets involved in the shipping industry; that is, newbuilding, sale and purchase (S&P), demolition, and time charter and spot freight markets. The cost structures of different types of vessels are also discussed and there is analysis of the various demand and supply factors that drive developments in shipping markets and their performance. It then presents in detail the shipping markets for various vessel types, which involves their supply–demand factors and current developments, including the dry-bulk market, tankers, the market for containers and the offshore shipping markets.

Chapter 2, “Asset Risk Assessment, Analysis and Forecasting in Asset Backed Finance”, is by Henriette Brent-Petersen of DVB Bank SE. She discusses the overall cyclicity of the shipping and offshore industries with primary focus on the supply side—shipyard capacity and future asset prices. She also outlines the methodology of forecasting the markets for dry bulk and container vessels, as well as the importance of evaluating the quality of the individual asset and the mitigation of the risks involved. Global demand and the role of China is examined in the effort to understand cyclicity and super cycles, sectoral cycles and counter-cycles, while the variables that affect cyclicity are discussed in detail. She applies the above notions in providing a market outlook of container and dry bulk markets, and finishes with the evaluation of the individual competitive advantages of the assets in relation to peers and the prior-mentioned analysis, as well as the quality of the asset (vessel) and the risks associated with the assets in asset-backed finance.

Chapter 3, “Overview of Ship Finance”, is by Fotis Giannakoulis of Morgan Stanley. He presents the available sources of finance for the maritime industry, arguing that “the ability of a shipping company to navigate the ebbs and flows of the market is primarily dependent on the timing of its investments and its chartering policy, with the selection among funding alternatives being of equal importance”. He discusses in detail: financing from banks, including mortgage-backed loans, newbuilding financing, mezzanine, unsecured/corporate loans and leasing finance; high yield bonds; convertible notes; initial public offerings (IPOs); follow-on offerings; master limited partnerships (MLPs); special purpose acquisition companies (SPAC); and private equity offerings.

Chapter 4, “Shipbuilding Finance”, by Charles R. Cushing of C. R. Cushing & Co. Inc., discusses vessel acquisitions. The first part of the chapter

outlines: the reasons for undertaking and alternatives to a new construction; project financing; issues that can go wrong in ship acquisition projects; project management issues; strategic planning and sub-plans, such as business, financing, operations, marketing, technology, competitor, human resources and organization plans; mission statements; and vessel design. The second part of the chapter discusses the choice of sources of funds for ship construction, such as: debt financing; loan syndication; mezzanine financing; high yield bonds; leasing; export credit agencies (ECAs); hybrid financing schemes, such as Kommanditgesellschaft—K/G, Kommandittselskap—K/S, DIFKO, blocked currency and barter trades; Islamic bank financing; government grants; public equity financing; private placements; and MLPs. The chapter concludes with financial aspects of shipbuilding contracts and progress payments.

Chapter 5, “Debt Financing in Shipping”, is contributed by George Paleokrassas of Watson Farley & Williams. He discusses the various types of debt financing, including the standard loan facility; that is, the lender, the borrower, syndications, the financing vessel, the facility amount, the conditions precedent, the currency, the tenor and repayment of the loan facility, the interest, the representations and warranties, the covenants, the governing law and jurisdiction, the events of default, and the bank fees; forms of leasing; bond financing; mezzanine financing; and ECAs. Then, the security package that the lender can receive from the borrower and its group is discussed, as this is critical in terms of assessing the risk in any particular transaction. The ship mortgage is then presented, followed by the assignment of earnings, charter hire, insurances, requisition compensation, charge or pledge over accounts, shares charge or pledge, and pre-delivery security assignment.

Chapter 6, “Public Debt Markets for Shipping”, by Basil M. Karatzas of Karatzas Marine Advisors & Co., discusses shipping bond financing and its details. This includes an example of a shipping bond issue, its pricing in the secondary market, the process of filing the relevant prospectus, of obtaining a credit rating, selecting an underwriter, the timing of the issue and the interest rate cost. The differences between shipping bonds and shipping loans are also outlined. The classification of shipping bonds based on collateral, and the covenants and special conditions, are discussed in detail. Finally, the chapter provides the main taxonomy of bonds, with special emphasis on those that are more suitable for shipping companies.

Chapter 7, “Public and Private Equity Markets”, is by Jeffrey Pribor and Cecilie Skajem Lind of Jefferies LLC. It focuses on the most relevant equity products available to private shipping companies. The discussion includes: the pros and cons of being a public versus a private company; IPO structures and

processes; and the role of private equity in the maritime industry. The chapter starts with an overview of public equity capital, such as C-corporations, limited partnerships, MLPs and SPACs, and continues by outlining the advantages and disadvantages of being a public company. It proceeds with the evolution of the shipping equity landscape since 2000, and continues with stock exchanges where there is shipping capital market activity. The four-phase process of an IPO is then analysed; that is, company preparation; drafting, diligence and initial Securities and Exchange Commission (SEC) filing; SEC review and response; and marketing, pricing and aftermarket. Also dealt with are what makes a good IPO and the pitfalls to avoid in the process. Equity valuation metrics are proposed, such as those of net asset value (NAV), forward earnings—earnings before interest, taxes, depreciation and amortization (EBITDA)—and dividend yield metrics. The chapter concludes with an overview of private equity (PE) in shipping and the relationship between PE firms and company management.

Chapter 8, “Structured Finance in Shipping” is by Ioannis Alexopoulos of Eurofin Group and Nikos Stratis of Augustea Group. They present structured finance instruments, as sets of complex financial transactions, and in particular ECA-backed shipping finance, leasing and mezzanine shipping finance. They start by explaining what ECAs are, their role in shipping finance, the various ECA shipping financing structures, the ECA requirements and OECD guidelines, and the pros and cons of ECA finance for shipping. Ship leasing, the types of leases, their benefits and drawbacks and the providers are then discussed prior to a detailed overview of mezzanine finance for shipping, the forms that it takes, the important issues to consider, the applications of it, and its pros and cons.

Chapter 9, “Key Clauses of a Shipping Loan Agreement” is by Kyriakos Spoullos of Norton Rose Fulbright. It provides a general overview of certain key clauses (commercial terms), commonly found in shipping loan agreements. Besides the financial terms of the relevant loan (e.g. the loan amount, the margin, the repayment profile, the interest periods, the last availability date), the chapter presents the operative clauses which constitute the “heart” of most financing documents. These clauses include the: representations and warranties; conditions precedent; covenants (e.g. minimum value clause, financial ratios); events of default; mandatory prepayment events; and assignment and transfer provisions.

Chapter 10, “Legal Aspects of Ship Mortgages”, is written by Simon D. Norton of Cardiff Business School, Cardiff University and Claudio Chisté of Investec Bank plc. They put forward the legal definition of mortgages, the limitations of ship mortgages as a form of security, the registration and

priority of mortgages, the powers of mortgagees (power of sale, power to take possession and the appointment of a receiver) and the rights of the mortgagor (right/obligation to insure the vessel, right to sell the vessel, application for sale by court order, the right to redeem the mortgage and foreclosure). The chapter closes with the authors' views of the likely future directions in ship mortgages as a form of financing, through the process of securitization.

Chapter 11, “Reasons and Mechanics of Handling Defaulted Shipping Loans and Methods of Recovery”, is written by Dimitris Anagnostopoulos and Philippos E. Tsamanis of the Aegean Baltic Bank. They present the standard actions and procedures applied when handling problematic bank loans, the early detection of signs and, once the problem is detected, how to handle it. They proceed by explaining the preparation for remedial action when a loan approaches default and the determinants of the bank's course of action. This includes several considerations, including financial, ship management and market outlook, collateral and bank related. They conclude with a discussion of the loan recovery process that takes place through the auction of the collateral vessel and the possible situations the bank may face during the arrest of vessels.

Chapter 12, “Marine Insurance”, is written by Marc A. Huybrechts of the University of Antwerp and Theodora Nikaki of Swansea University. They focus on insurance coverage needs taken out by the shipyard, the vessel's financiers and the shipowners as operators of the vessel. They discuss the specifics of marine insurance, which an insured should always keep in mind. These are: the “risks” that a shipowner wants to be covered for, including property, liability, legal issues, lost time, compulsory risks and the associated insurances; the need to purchase insurance cover for the successful and safe operation of the vessel; by whom these risks could be insured against; and who the providers of the insurance cover are. Finally, the cost of each type of insurance and other specific aspects of marine insurance are presented.

Chapter 13, “Maritime Investment Appraisal and Budgeting”, is contributed by Wolfgang Drobetz of the University of Hamburg, Stefan Albertijn of HAMANT Beratungs- und Investitions GmbH and Max Johns from the German Shipowners' Association. They present the basic principles of vessel valuation, by illustrating the “mark-to-market” approach, and the long term asset value (LTAV) method as an example of the discounted cash flow (DCF) approach (“mark-to-model”). They also discuss the necessary conditions for the equivalence of market prices and the fundamental values of vessels. The valuation of listed shipping companies using the above methods and other commonly used financial ratios is compared with a matched sample of manufacturing firms, where it is found that: ratios generally tend to be less cyclical

in the manufacturing sector; shipping companies have a much higher leverage than comparable manufacturing companies; and, as shipping companies are portfolios of vessels, asset tangibility is notably high in the shipping sample.

Chapter 14, “Financial Analysis and the Modeling of Ship Investment” is contributed by Lars Patterson of Pacomarine Limited. He presents several practical examples of financial models for the evaluation of shipping investments, their assumptions, the key ratios and indicators, and the theory behind investment criteria and value drivers. The value of flexibility (optionality) for the shipowner is also discussed in terms of the timing of the purchase of a ship, its sale, the type of charter chosen and the amount of debt financing utilized. Key practical issues in maritime financial analysis are also discussed, including: purchasing the ship and the timing of the exit; going for a new-building versus a second-hand purchase; scrapping; the selection of operating expenses; the type of employment in terms of charter parties; and the financing methods. The chapter concludes by considering ships as investments, with important features determining their valuation that include the market price of the vessel, its cash flow, its charter, market expectations, the secondary markets for trading vessels, the age of the vessels, as well as market risk and credit risk.

Chapter 15, “Maritime Business Freight Risk Management” is written by Manolis G. Kavussanos of the Athens University of Economics and Business and Ilias D. Visvikis of the World Maritime University. They cover the freight derivatives market and the latest developments and trends in this area, including: freight rate indices and routes that are used as the underlying assets of freight derivatives; the available freight derivative products, that is, freight futures, forward freight agreements (FFAs) and freight options; the freight markets established around the world; and the various usages of freight derivatives for risk management—hedging—purposes. The various trading screens for freight risk management, as well as the latest regulations in derivatives markets, are included in this chapter.

Chapter 16, “Mergers and Acquisitions in Shipping” is contributed by George Alexandridis of Henley Business School at the University of Reading and Manish Singh of V.Group Ltd. The chapter provides a detailed overview of M&As in shipping and the motives behind them, including their role in attaining operating synergies in the form of cost reduction and revenue enhancement opportunities; financial synergies; market share enhancement and reduction of competition; and diversification of the asset base. The discussion on the M&A process also covers: strategy formulation; identification and analysis of M&A targets; cultivation of the targets; due diligence; and the post-acquisition integration process. The chapter provides

a road map of M&A valuation in shipping and in particular cash flow, asset based and relative valuation methods. The financing of shipping M&As is also discussed. The chapter concludes by presenting new empirical research on whether shipping M&As create value for shareholders.

Manolis G. Kavussanos
Athens University of Economics and Business
Athens, Greece
e-mail: mkavus@aueb.gr

Ilias D. Visvikis
World Maritime University
Malmö, Sweden
e-mail: iv@wmu.se

September 2016

Contents

1 Shipping Markets and Their Economic Drivers	1
<i>Jan-Henrik Hübner</i>	
1.1 An Introduction to Shipping	1
1.2 The Drivers of Shipping Markets	9
1.3 Shipping Market Performance	13
1.4 The Bulk Shipping Market	15
1.5 The Tanker Shipping Market	20
1.6 The Container Shipping Market	26
1.7 The Offshore Market	31
1.8 Summary	37
Bibliography	38
2 Asset Risk Assessment, Analysis and Forecasting in Asset Backed Finance	41
<i>Henriette Brent-Petersen</i>	
2.1 Introduction	41
2.2 Global Demand and China: Cyclicity, Super Cycles, Sector Cycles and Counter-Cyclicity	43
2.3 The Shipping Sector Market Outlook	53
2.4 The Asset: Importance of Asset Specifications	63
2.5 Mitigation of Risks	65
2.6 Conclusion	66

3	Overview of Shipping Finance	71
	<i>Fotis Giannakoulis</i>	
3.1	Introduction	71
3.2	Sources of Ship Financing	72
3.3	Conclusion	93
	Bibliography	94
4	Shipbuilding Finance	95
	<i>Charles R. Cushing</i>	
4.1	Introduction	95
4.2	Conclusion	123
	Bibliography	124
5	Debt Financing in Shipping	125
	<i>George Paleokrassas</i>	
5.1	Introduction	125
5.2	Types of Debt Financing	126
5.3	Security Package	141
5.4	Conclusion	144
	Bibliography	145
6	Public Debt Markets for Shipping	147
	<i>Basil M. Karatzas</i>	
6.1	Introduction	147
6.2	Basic Concepts of Bonds	147
6.3	Bond Issuing Example	149
6.4	Bond Pricing in the Secondary Market Example	149
6.5	Issuing of a Shipping Bond	150
6.6	Filing a Prospectus	150
6.7	Obtaining a Credit Rating	151
6.8	Selecting an Underwriter	152
6.9	Timing of Issuing Shipping Bonds	154
6.10	Shipping Bonds and Interest Rate Cost	155
6.11	Considerations for the Cost of Shipping Bonds	156
6.12	Difference from Shipping Loans	157
6.13	Classification of Shipping Bonds Based on Collateral	160
6.14	Covenants and Special Conditions	163
6.15	Types of Shipping Bonds	164
6.16	Conclusion	167

7	Public and Private Equity Markets	169
	<i>Jeffrey Pribor and Cecilie Skajem Lind</i>	
7.1	Introduction	169
7.2	Public Equity	170
7.3	Private Equity	184
7.4	Conclusion	188
	References	189
8	Structured Finance in Shipping	191
	<i>Ioannis Alexopoulos and Nikos Stratis</i>	
8.1	The Changing Landscape of the Ship Financing Market	191
8.2	ECAs	193
8.3	Leasing Ship Finance	199
8.4	Mezzanine Ship Finance	206
8.5	Conclusion	209
	Bibliography	211
9	Key Clauses of a Shipping Loan Agreement	213
	<i>Kyriakos Spoullou</i>	
9.1	Introduction	213
9.2	Operative Clauses	214
9.3	Representations and Warranties	216
9.4	Conditions Precedent	217
9.5	Covenants	218
9.6	Events of Default	224
9.7	Mandatory Prepayments	225
9.8	Assignment and Transfer	226
9.9	Conclusion	228
	Bibliography	229
10	Legal Aspects of Ship Mortgages	231
	<i>Simon D. Norton and Claudio Chiste</i>	
10.1	Mortgages: A Definition	231
10.2	Limitations of Ship Mortgages as a Form of Security	234
10.3	Registration and the Priority of Mortgages	236
10.4	Powers of Mortgagees	238
10.5	Rights of the Mortgagor	245
10.6	Future Directions in Ship Mortgages as a Form of Financing: Securitization	249

10.7 Conclusion	250
Bibliography	251
11 Mechanics of Handling Defaulted Shipping	
Loans and the Methods of Recovery	253
<i>Dimitris C. Anagnostopoulos and Philippos E. Tsamanis</i>	
11.1 Introduction	253
11.2 The 1981–86 Shipping Crisis vs the Post-2008 Period	254
11.3 The Mechanics of Handling Problematic Bank Loans	255
11.4 Early Detection of Signs	255
11.5 Once the Problem Is Detected	256
11.6 Preparation for Remedial Action	258
11.7 Determinants of the Bank’s Course of Action	260
11.8 Loan Recovery Through Auction of the Collateral Vessel	263
11.9 Situations a Bank May Face During a Vessel’s Arrest	265
11.10 Conclusion: The Other Side of the Coin	266
References	266
12 Marine Insurance	267
<i>Marc A. Huybrechts and Theodora Nikaki</i>	
12.1 Overview	267
12.2 Builders’ Risk Insurance	268
12.3 Financiers’ Insurance	269
12.4 Owners’ Insurance	271
12.5 Conclusion	279
References	282
13 Maritime Investment Appraisal and Budgeting	285
<i>Stefan Albertijn, Wolfgang Drobetz, and Max Johns</i>	
13.1 Introduction	285
13.2 Market Approach	287
13.3 Discounted Cash-Flow Approach	295
13.4 Comparing Value and Price	302
13.5 Financial Analysis of Shipping Companies	304
13.6 Conclusion	307
References	312

14 Financial Analysis and the Modeling of Ship Investment	315
<i>Lars Patterson</i>	
14.1 Introduction	315
14.2 An Example of a Financial Model	316
14.3 Theory Behind the Ship Investment Criteria and Value Drivers	320
14.4 A Few Comments on Ship Investment Practice	324
14.5 Ships as an Investment	332
14.6 Conclusion	334
References and Links	334
Bibliography	335
15 Maritime Business Freight Risk Management	337
<i>Manolis G. Kavussanos and Ilias D. Visvikis</i>	
15.1 Introduction	337
15.2 Freight Derivatives Market	338
15.3 Freight Rate Indices: The Underlying Assets of Freight Derivatives	340
15.4 Freight Derivatives Markets and Products	349
15.5 The Baltic Forward Assessments	358
15.6 Trading Screens	360
15.7 Regulations in Derivatives Markets	362
15.8 Conclusion	365
Bibliography and References	367
16 Mergers and Acquisitions in Shipping	371
<i>George Alexandridis and Manish Singh</i>	
16.1 Introduction	371
16.2 The Shipping M&A Market	372
16.3 Motives for M&As in Shipping	377
16.4 M&A Process	381
16.5 Shipping M&A Valuation	385
16.6 Financing of Shipping M&As	394
16.7 Value Creation in Shipping M&As	398
16.8 Conclusion	407
References	411
Index	415

About the Contributors

Stefan Albertijn joined the Baltic Exchange Board as Shareholders Director in 2012 and became Chairman of Baltic Exchange Information Services Ltd, which produces the Baltic shipping benchmarks and indices, in 2014. He started his career in 1999 when he joined Deutsche Bank AG, holding various corporate and investment banking positions in Germany and Belgium before joining the shipping department at ADM Alfred C. Toepfer International GmbH in 2005 and becoming its Global Head of Risk Management in 2010. In 2015 he joined Ocean Finance & Consultancy BVBA (Oficon) and Hamant Beratungs- und Investitionsgesellschaft mbH, niche consultants specializing in risk management for the shipping and agri-industries, as Managing Director. He has been a Guest Lecturer in shipping finance at Hamburg University since 2009 where he was also a founding member of the Hamburg Financial Research Centre. Furthermore he is a member of various shipping, financial and grain trading associations in Belgium and Germany and is actively engaged in the alumni groups Alechia and VEUK. He studied economics at the Universities of Antwerp and Konstanz and has authored various publications on shipping finance and financial derivatives.

George Alexandridis is an Associate Professor of finance at the ICMA Centre of Henley Business School, University of Reading, UK. He is also the program area director for all finance masters at the ICMA Centre and is the co-founder and director of the MSc in International Shipping and Finance. He is renowned for his work on mergers and acquisitions and shipping finance. His research is published in leading international journals and presented at major global conferences. As part of his role as Director of Shipping Programmes at Henley, he has established international collaborations with universities and business schools as well as relationships with financial institutions, shipping companies and other organizations. He also frequently appears as a commentator on financial and political issues on national television. He is an affiliate member of the Chartered Institute for Securities & Investment and is a fellow of the Higher Education Academy.

Ioannis Alexopoulos has more than 15 years of professional experience in the shipping, banking and the maritime finance industries. He is a Director at the Athens office of Eurofin Group; a ship-financing, investment boutique established in 1984 with offices in London, Athens and Singapore. Mr. Alexopoulos gained experience in shipping through short-term employments with Golden Union Shipping Co. (which included time at sea), Carriers Chartering S.A. in Piraeus and Angus Graham & Partners in London. He then joined Laiki Private Banking in Cyprus, an HSBC Group associate in 1999 where he held positions in both portfolio management and client advice, servicing expatriate as well as offshore High Net Worth Individuals. He joined the Athens office of Eurofin Group in 2002 and is responsible for the Group's ship financing operations in Greece. In addition, he is a key part of the Eurofin team, which acts as a Consultant to KfW IPEX-Bank for its Greek debt shipping portfolio. He has delivered a number of speeches on ship finance, at several Shipping and Ship-finance Conferences around the world. He is a visiting lecturer on Shipping Finance, at the ALBA Graduate Business School in Athens, Greece and on Maritime Economics, at the Henley Business School of the University of Reading in the UK. He holds a BSc in Economics and Business Economics from Southampton University and an MSc in Shipping, Trade and Finance from Cass Business School, City University in London.

Dimitris Anagnostopoulos has over 40 years of experience in shipping, shipping finance and bank management. He obtained his BSc at the Athens University of Economics and Business. His career began in the 1970s as Assistant Lecturer at the same university followed by four years with the Onassis Shipping Group in Monaco. He has also held various posts at the National Investment Bank of Industrial Development, the Continental Illinois National Bank of Chicago, the Greyhound Corporation and ABN AMRO Bank, where he has spent nearly two decades, holding the positions of Senior Vice President and Head of Shipping. Since 2010 he has been an advisor and board member of the Aegean Baltic Bank. He has been a speaker and panelist at various shipping conferences in Europe, and is a regular guest lecturer at the City University Cass Business School in London and the Erasmus University in Rotterdam. He is a member (and ex-vice chairman) of the Association of Banking and Financial Executives of Greek Shipping and an Associate Member of the Institute of Energy of South East Europe. He was in 2008 named by the Lloyd's Organization as Shipping Financier of the Year.

Henriette Brent-Petersen is Managing Director of the Shipping and Offshore Research department with DVB Bank, which provides fundamental shipping and offshore research in all sectors and is an integrated part of the bank's business model. Externally she represents DVB by presenting shipping and offshore market outlooks to customers and rating agencies and is a frequent speaker at conferences such as Marine Money, Capital Link, Informa, Euromoney and ibc. She is also a voting member of the bank's investment fund SIIM. Before joining DVB Bank, she had headed for almost a decade the Maersk Broker Research Department, which

provided research on all sectors of the maritime shipping industry for international companies, banks and other stakeholders. She also has a strong financial background from Citibank where she started as a management associate before working for several years as a relationship manager, joining Maersk Broker in 2003. She started her working life as a country and bank analyst, covering Eastern Europe and CIS with the Danish ECA, Eksport Kredit Fonden. She holds a master's degree in economic science from Copenhagen University and has worked as an external teacher, lecturer and examiner for almost a decade at the Copenhagen Business School—initially in the field of financial statement analysis and marketing, but today in relation to the blue MBA.

Claudio Chisté works at Investec Bank plc in the Shipping and Marine Finance Team. His career began as an officer in the South African Navy, graduating from the Military Academy (Faculty of Military Science of the University of Stellenbosch) with a degree in mathematics and nautical science. Four years at sea followed, when he served as both gunnery and diving officer, culminating in being appointed for a period in command of a vessel within the Mine Countermeasures Flotilla. He also completed a B.Comm (Hons) through the University of Cape Town whilst serving. After leaving the Navy, he qualified as a yacht skipper and scuba diving instructor, going on to manage a 28-meter luxury motor yacht in the Mediterranean. Subsequently, he chose a land-based career and read for a master's degree in shipping, trade and finance at London's Cass Business School as a means to bridge the gap between practical skills and the commercial world. He was ranked in the "Next Generation" of Lloyd's List in their "On our Radar" (for the most influential people in shipping). He is the chairman of the Shipping Professional Network in London, a networking forum for young shipping professionals, having a strong following of over 1,000 members and associates with industry backing from the UK Chamber of Shipping.

Charles R. Cushing is a naval architect and marine engineer. His firm C.R. Cushing & Co. was founded in 1968 and has designed and/or supervised the construction or conversion of over 250 vessels of all types in most major shipyards worldwide. Because of his pioneering work at Sea-Land in the early 1960s and ongoing expertise in this field, he was inducted into the National Academy of Engineering. He has received numerous awards and is a member of several maritime professional societies. He is a licensed deck officer and a graduate of USMMA (BS), MIT (BS, NA & ME), SUNY Maritime (MS, OT) and Cardiff University (PhD, maritime studies). He has been an adjunct professor at the World Maritime University, both in Malmo, from 1988 (where he received a DSc (Hon) degree), and in Dalian, China, from 2005.

Wolfgang Drobetz is Professor of Corporate Finance and Shipping Finance at the University of Hamburg. He holds a PhD in economics from the University of St. Gallen and completed his habilitation at the University of Basel. He taught financial theory at the Bucerus Law School and the WHU Otto Beisheim Graduate School. His research interests include corporate finance, corporate governance, asset management and shipping finance. His research has been published in leading academic and

practitioner journals. He is a member of the editorial board of several academic journals and served as Co-President of the European Financial Management Association.

Fotis Giannakoulis is the Lead US Maritime Analyst at Morgan Stanley, covering tankers, dry bulk, containership, gas carriers and offshore supply vessels, which he joined 2010. Since then he has worked on a number of public offerings, raising over USD10 billion. He is the no. 1 winner of the 2015 Thomson Reuters StarMine Analyst Award for the marine sector. Prior to joining Morgan Stanley, he was a banker at Fortis Bank (currently ABN AMRO) and Poten Capital Services, putting together a number of debt and equity financings and working on several advisory mandates. He holds a bachelor's degree in economics from the University of Piraeus and earned his MBA with honors from Loyola University Chicago, where he was the Walter F. Mullady scholar.

Jan-Henrik Hübner is the global head of DNV GL's Shipping Advisory. Together with his team he is supporting shipping companies, ship financing banks and funds, yards, terminals and governmental organizations across a wide range of strategic and operational challenges, including energy management and operational improvement programs for ship operators as well as portfolio analyses and decision support for ship financing banks. Before joining DNV GL in 2010 he worked for nine years for the global management consulting firm McKinsey & Company. He advised clients in various process industries on strategic and operational challenges. Key aspects were operational improvement programs and various aspects of energy efficiency. He graduated in wood science and technology at the University of Hamburg and received his PhD on the effects of emission trading and other aspects of environmental economics.

Marc A. Huybrechts received a Doctor of Laws from the Catholic University of Leuven in 1964, and an LLM from Berkeley, Boalt Hall (California) in 1966. He is a member of the Antwerp Bar and is Emeritus Professor of Law at the Catholic University of Leuven and at Antwerp University (Belgium). He is also Visiting Professor at the Dalian Maritime University in the People's Republic of China, and at ALBA in Athens. He is Emeritus Auxiliary Justice at the Antwerp Court of Appeal and a former board member of the Antwerp Bar; Arbitrator in the International Maritime Conciliation and Mediation Panel (London); Editor for Transport Law of the Encyclopedia of International Law; and member of the editorial board of *Tijdschrift voor Vervoer en Recht*. He is a titular member of the Comité Maritime International (CMI) and a member of the Law Commission to revise the Belgian Maritime Law.

Max Johns is Managing Director at VDR German Shipowners' Association in Hamburg. He has taught shipping finance at the Maritime Business School of the Hamburg School of Business Administration (HSBA) since 2008 and has become a professor at HSBA in 2016. He holds BA and MA degrees from the Université Paul Valéry Montpellier III in France, an MBA from KU Leuven in Belgium and was

awarded a doctoral degree from the University of Tübingen in Germany. He publishes frequently on maritime issues.

Basil M. Karatzas is the CEO of Karatzas Marine Advisors & Co based in New York, a shipping finance advisory and ship brokerage firm, advising and representing ship-owners and institutional investors on shipping and financial matters. He has an extensive and successful record on representing, upon exclusive mandate, financial owners of vessels seeking asset management optimization through remarketing, disposition, restructuring, co-investments and private placements, and has worked with the biggest players in the industry. He is a member of numerous industry bodies and organizations and a frequent speaker at industry conferences and a contributor to business publications. He holds an MBA from Rice University in Houston, Texas.

Cecilie Skajem Lind is an associate in the Global Industrials Investment Banking Group at Jefferies LLC, which she joined in August 2014. Previously she had worked in operations and risk management at A. M. Nomikos & Son, a Greek dry bulk shipowner and operator, and was an investment advisor at Beacon Shipping Investments. She received an MBA from Harvard Business School and a BA (Hons) from University College London.

Theodora Nikaki joined Swansea University in 2005 as a lecturer and was promoted to Associate Professor in 2013. She is currently Deputy Head of the Department of Postgraduate Legal Studies, College of Law. She is a graduate of the Aristotle University of Thessalonica (LLB and LL.M in commercial and economic law, with distinction). Having worked in private practice for several years, she also obtained an LL.M degree in admiralty and maritime law from Tulane Law School (New Orleans, USA) in 2001 with distinction. She then went to work in a maritime law firm in the United States before undertaking her PhD degree in the carriage of goods by sea and transport law in the UK. Her principal research interest is in the field of carriage of goods by sea, but her interests extend to private international law and multimodal transport. During the 2011–12 academic year she was awarded a visiting fellowship at the Institute of Advanced Legal Studies (University of London) and a visiting researcher position at the Scandinavian Institute of Maritime Law in Oslo. She is an active researcher and has published in several significant journals such as *The Journal of Business Law*, the *Journal of Maritime Law and Commerce*, the *Berkeley Journal of International Law* and the *Tulane Maritime Law Journal*.

Simon D. Norton lectures at Cardiff Business School in the field of banking law and regulation and financial crime, principally money laundering. He holds a doctorate in shipping finance and is the course director for this subject with the Institute of Chartered Shipbrokers, for which he has written the standard textbook. He also lectures in shipping finance and maritime law at an international business school in the West Indies. He has previously worked in the capital markets in London with a 'Top 10' Japanese finance house where he specialized in interest rate and currency swaps, and new issues. It was here that he developed his interest in complex financial

structures and their applicability to ship financing. He also has a current interest in the application of Islamic finance principles and instruments to ship purchase. He maintains his interests and contacts in the practical (as opposed to academic) maritime world through attendance at workshops and social engagements with bankers, lawyers and brokers. He recently wrote a practitioner-oriented course on the commercial aspects of setting up and running, from scratch, a ship-owning business.

George Paleokrassas is a partner in the asset finance group of Watson Farley & Williams and is head of the firm's Greek office. For more than 20 years he has worked on a broad range of transactions in the maritime sector, acting for major shipping lenders and shipowners in the structuring and restructuring of loan transactions, the acquisition, sale and transfer of shipping loan portfolios, transactions involving distressed assets as well as for owners, operators and investors in shipbuilding projects, long-term charter arrangements, leasing transactions, joint ventures and other general corporate matters involving shipowning groups. Watson Farley & Williams is a leading international law firm dedicated to client care, industry focus and investment in its people, delivering valued advice on a wide range of corporate and finance transactions and disputes from 14 offices in major financial centres in Europe, the Middle East, Asia and the USA.

Lars Patterson is a graduate of the Norwegian School of Economics. He started his working career in shipping and finance with the merchant bank Samuel Montagu & Co and the shipbroking firm Galbraith's (Galbraith Montagu). During his time working for Torstein Hagen and Marine Investments S.A. he learnt to appreciate the value of financial modeling and how the process can improve the quality of analysis and create value for shareholders. Over the last 25 years he has been a non-executive director, advisor and consultant to a large number of shipping companies. From 2003 to 2015 he worked as a shipping investment analyst with London-based investment manager Marine Capital Limited. Together with Marcus Martinsson he is a founder and shareholder of Pacomarine Limited which provides software applications for the analysis of shipping investments.

Jeffrey Pribor is a managing director and Global Head of Maritime Investment Banking at Jefferies LLC. He has more than 30 years of corporate finance and maritime shipping experience. Prior to joining Jefferies, he was the Chief financial officer (CFO) of General Maritime, a leading international tanker company, which he helped guide through a pre-arranged Chapter 11 bankruptcy proceeding, and where he helped to conduct a successful hostile takeover defense and a leveraged recapitalization with a USD500 million special dividend to shareholders. Prior to joining General Maritime, he was Managing Director and President of DnB NOR Markets, Inc. and a senior banker at Merrill Lynch. He received a JD and an MBA from Columbia University and a BA from Yale University.

Manish Singh, as a third-generation seafarer, he started his maritime career with seagoing experience on tankers, dry cargo and self-unloaders. With over 20 years of

industry experience, Manish has held diverse roles in ship management, marine conversions and infrastructure projects, offshore, marine financial and commercial services. As Group Commercial Director, Manish is responsible for the formulation and implementation of V.Group's commercial and corporate strategies and leads on acquisition projects and the Group's legal function. Since 2007, Manish has held senior management roles in V.Group's corporate team, with responsibilities including Offshore, Asset Management and Business Development for Asia region. Manish is a Master Mariner and an MBA from Cranfield University – School of Management. When not pursuing all things marine, Manish loves to travel, is a voracious reader, follows folk music and plays traditional Indian percussion. Manish writes extensively as a columnist on various industry, management journals and on his blogs.

Kyriakos Spoullos studied law in Greece and obtained his degree from the Kapodistrian University of Athens. He obtained his master's degree in shipping, trade and finance from the Sir John Cass Business School of the City University in London. He joined Norton Rose Fulbright in June 2006 from a Greek leading law firm (V&P). He is a member of the Athens Bar and is a UK solicitor. He represents a number of major Greek and international banks that do business in shipping as well as numerous large shipping groups based or doing business in Greece; he specializes in various finance sectors and industries, including shipping and asset finance, project finance and structured and complex banking products. He has vast experience in big syndicated and bilateral loans, secured and unsecured facilities, bond loans, restructuring and work out arrangements, monitoring "problem" loans as well as contract negotiations (i.e. charterparties, Memorandum Of Agreements (MOAs) and shipbuilding contracts). Additionally, he has significant experience in international capital markets, M&As, Initial Public Offerings (IPOs), joint ventures schemes and sale and purchase of shares agreements in shipping. Norton Rose Fulbright is a top 10 global legal practice with more than 3800 lawyers and other legal staff based in more than 50 cities across Europe, the United States, Canada, Latin America, Asia, Australia, Africa, the Middle East and Central Asia.

Nikos Stratis currently serves as a managing director with Chief financial officer (CFO) responsibilities for Augustea Group dry bulk business unit, which collectively controls a fleet of 35 vessels. Prior to that he co-founded Northern Shipping Funds where from 2008 to 2014 he held positions in the fund's investment committee and board of portfolio companies and operated as a senior investment manager responsible primarily for European and Middle East markets. His role included sourcing, structuring and the execution of shipping investments as well as investor relations. From 2001 to 2008 he was employed by DVB Bank, seconded to the bank's shipping investment fund as a senior investment manager. He was instrumental in the launching of a series of shipping funds, including the then largest Islamic Shipping Fund. He holds a BEng and an MSc in marine engineering from the University of Newcastle-upon-Tyne and an MSc in shipping, trade and finance from the City University Business School, London. Prior to joining DVB Bank, he gained experience in

various shipping firms such as Lloyd's Register of Shipping, Aeolos Maritime and Ionian Tugboats, where he also served as an officer on ocean-going vessels.

Philippos E. Tsamanis has been with Aegean Baltic Bank, a Greek bank specializing in shipping finance, since its establishment in 2002. From 2006, he has headed the Bank's Business Development Department and since 2008 has been the Head of Shipping. He is a member of the Bank's Credit Committee and its Assets & Liabilities Committee. Previously, he worked for Euro Finance Services SA (1995–2002), a shipping finance and advisory firm specializing in the arrangement and management of syndicated shipping loans, the handling of problematic loans/third party accounts, and the providing of consultancy to shipping companies and banks on shipping debt and equity capital raising. Following his graduation from Athens College, he obtained a BA in government and economics from the University of Essex. He also holds a master's degree in shipping, trade and finance from Cass Business School of the City University of London.

List of Abbreviations

AHTs	Anchor handling tugs
ANPL	Arrears and non-performing loans
APV	Adjusted present value
ASEAN	Association of Southeast Asia Nations
BALMO	Balance-of-month
Baltex	Baltic Exchange trading screen
BCI	Baltic Capesize Index
BCTI	Baltic Clean Tanker Index
BDI	Baltic Dry Index
BDTI	Baltic Dirty Tanker Index
BEDT	Baltic Exchange Derivatives Trading
BEP Asia	Baltic Exchange Panamax Asia
BES 58 Asia	Baltic Exchange Supramax 58 Asia
BES Asia	Baltic Exchange Supramax Asia
BFA	Baltic Forward Assessments
BHAR	Buy-and-hold abnormal return
BHSI	Baltic Handysize Index
BIS	Bank of International Settlements
BITR	Baltic International Tanker Route
BOA	Baltic Options' Assessments
bp	Basis points
BPI	Baltic Panamax Index
BSI	Baltic Supramax Index
BSI 58	Supramax Index
BSPA	Baltic Sale and Purchase Assessments
BUNKER	Civil liability for bunker oil pollution damage
CAGR	Compound annual growth rate
CAPEX	Capital expenses

CAPM	Capital asset pricing model
CAR	Cumulative abnormal return
CCFI	China Containerized Freight Index
CCP	Central counterparty clearing house
CEXIM	Chinese Export Import Bank
CFDs	Contracts-for-difference
CFSAs	Container forward swap agreements
CFTC	Commodity Futures Trading Commission
CGT	Compensated gross tonnage
CIRR	Commercial interest reference rate
CLC	Civil liability for oil pollution damage
CLO	Collateralized loan obligations
CLTX	Cleartrade Exchange
CME Group	Chicago Mercantile Exchange Group
COA	Contract of affreightment
ConTex	Container Ship Time Charter Assessment Index
CPT	Capesize 2014 time-charter basket
CTARs	Calendar time abnormal returns
CTC	Capesize time-charter basket
CTR	Calendar-time approach
DCF	Discounted cash flow
DCM	Designated contract market
DCO	Derivatives clearing organization
DD	Dry docking
DFA	Dodd-Frank Wall Street Reform and Consumer Protection Act
dwt	Deadweight tonnage
E&P	Exploration and production
EBIAT	Earnings before interest and after taxes
EBITDA	Earnings before interest, taxes, depreciation and amortization
ECA	Export credit agency
ECGD	Export Credit Guarantee Department (UK)
EEDI	Energy Efficiency Design Index
EGC	Emerging growth company
EIBC	Export-Import Bank of China
EMIR	European Markets Infrastructure Regulation
ERSB	European Systemic Risk Board
ESMA	European Securities and Markets Authority
EU	European Union
Euribor	Euro Interbank Offered Rate
EV	Enterprise value
EXIM	Export-Import Bank of U.S.
FATCA	Foreign Account Tax Compliance Act
FCA	Financial Conduct Authorities

FCF	Free cash flows
FDI	Foreign direct investment
FEU	Forty-foot equivalent unit
FFA	Forward freight agreements
FFABA	FFA Brokers Association
FMV	Fair market value
FPSO	Floating production storage and offloading
FR	Financial ratio
FSRU	Floating storage and regasification unit
GAAP	Generally accepted accounting principles
GCM	General clearing member
GDP	Gross domestic product
GT	Gross tonnage
H&M	Hull and machinery
HFO	Heavy fuel oil
HTC	Handysize time-charter basket
Hx	Handymax
ICBR	Institute Clauses for Builders' Risks
ICE	Intercontinental Exchange
ICS	International Chamber of Shipping
IDR	Incentive distribution rights
IGA P&I	International Group of P&I Clubs
IM	Information memorandum
IMAREX	International Maritime Exchange
IMF	International Monetary Fund
IMIC	Institute Mortgagees' Interest Clauses
IOSCO	International Organization of Securities Commissions
IPO	Initial public offering
IRR	Internal rate of return
ISM	International safety management
ISPS	International ship and port facility code
JOBS	Jumpstart Our Business Startups
JBIC	Japan Bank for International Cooperation
JV	Joint ventures
KEXIM	Export-Import Bank of Korea
LBO	Leveraged buyout
LCH	London Clearing House
LCH.Clearnet	London Clearing House Clearnet
LDT	Light displacement ton
LIBOR	London Interbank Offered Rate
LLMC	Limitation of Liability for Maritime Claims
LNG	Liquefied natural gas
LP	Limited partnership