Available online at <https://journals.sjp.ac.lk>

JOURNAL OF REAL ESTATE STUDIES

ISSN 3051-4878 [PRINT] | E-ISSN 3051-4886 [ONLINE]

Valuation of the Cruise Ship: A Discounted Cash Flow Analysis

Aditya Kumbar^{a*} and Shekhar Nagargoje^b^{a,b} RICS School of Built Environment, Amity University, Mumbai

ABSTRACT

The global cruise industry has rebounded sharply from pandemic-era disruptions. It recorded a market size of USD 25.93 billion in 2024, and it is projected to grow at a compound annual growth rate (CAGR) of 6.7% through 2032. Against this backdrop, this paper presents a comprehensive financial valuation of the Cruise Ship, the world's largest cruise ship by gross tonnage, owned and operated by Cruise Liner International. The vessel was launched in January 2024. It carries up to 7,600 passengers across 20 decks, and its building cost was approximately USD 2 billion. The valuation follows the RICS Valuation Global Standards 2024 (Red Book) and applies the Income Approach using the Discounted Cash Flow (DCF) methodology. Revenue projections assume a 100% occupancy rate, an Average Daily Rate (ADR) of USD 456.30, and a 5% annual escalation. Operating costs, covering fuel, crew salaries, port fees, food and beverage, maintenance, onboard services, and marketing, are modelled as percentages of gross revenue. The Weighted Average Cost of Capital (WACC) is derived at 6.76%, and a risk-adjusted discount rate of 9% is applied to reflect the capital-intensive and cyclically vulnerable nature of the cruise industry. The resulting Net Present Value (NPV) of the asset, as of 15 September 2025, is estimated at USD 5.50 billion. This paper bridges a gap in literature by applying formal real estate valuation frameworks to the emerging asset class of mega cruise ships. It demonstrates that income-based methodologies can effectively capture the financial complexity of floating hospitality assets, and it offers a replicable, practice-oriented valuation framework that analysts can apply to comparable vessels.

ARTICLE INFO

Article History:

Received: 10 April 2026

Revised: 20 May 2026

Accepted: 28 June 2026

Keywords:

Asset valuation
Cruise ship economics
Discounted cash flow
RICS standards

© 2026. Centre for Real Estate Studies, University of Sri Jayewardenepura.

1. INTRODUCTION

Cruise tourism sits at an interesting crossroads between the hospitality industry and the global maritime economy. What began as an exclusive

mode of ocean travel has evolved into a mainstream leisure product that now attracts tens of millions of passengers annually from virtually every corner of the world. The scale of modern cruise ships

* Corresponding author. Tel: +91 879 245 1999; Email: adityak.mc24m@ricsbe.edu.in; <https://orcid.org/0009-0005-8992-9039>

Institution: RICS School of Built Environment, Amity University, Mumbai

Co-authors: <https://orcid.org/0000-0002-0234-4734>

Doi: [10.31357/jres.v23i02.9104](https://doi.org/10.31357/jres.v23i02.9104)

© 2026. Centre for Real Estate Studies, University of Sri Jayewardenepura.

defies easy categorization; vessels like the Cruise Ship are no longer simply ships but floating cities, housing entire commercial, entertainment, and residential ecosystems under one roof.

The Cruise Ship, launched by Cruise Liner, represents the current apex of this evolution. With a gross tonnage of 248,663 GT, a length of 365 meters, and capacity for up to 7,600 guests across 2,805 staterooms, it surpasses any previously built cruise vessel. Its construction cost approximately EUR 1.9 billion (around USD 2 billion) and was carried out by Meyer Werft in Turku, Finland. The ship operates from Miami, Florida, conducting weekly seven-night Caribbean itineraries across Eastern and Western routes, with planned annual voyages of 52-53 trips.

Despite the commercial significance of assets of this scale, academic literature on the financial valuation of cruise ships remains limited. Real estate valuation theory has largely focused on land-based assets, and while maritime economics addresses freight vessel values and charter rates, the income-generating dynamics of passenger cruise ships have received comparatively little formal treatment. This creates a specific research problem: practitioners advising cruise operators, lenders, and insurers on multi-billion-dollar vessel transactions currently have no standardized, RICS-aligned framework to draw on, and are instead left to adapt hotel or general commercial-property valuation templates that do not fully capture the mobile, multi-revenue-stream nature of a mega cruise ship. This paper attempts to fill that gap by applying the RICS Red Book 2024 standards to value the Cruise Ship as an income-generating asset, using the DCF method.

The paper is structured to first contextualize the cruise ship market and the asset under review, then detail the valuation methodology and assumptions, and finally present and discuss the estimated market value. The study draws

on publicly available financial data, industry benchmarks from the Cruise Lines International Association (CLIA), and Cruise Liner Group annual reports. It is prepared as an academic exercise and should not be construed as investment advice or a commercial appraisal.

This research makes three specific contributions. First, it applies a structured RICS-compliant valuation framework to a non-traditional asset class, demonstrating the adaptability of established real estate methodologies. Second, it models the multi-stream revenue structure of a mega cruise ship, including not just ticket revenue but onboard spending across restaurants, spas, casinos, retail, and excursions. Third, it integrates market-derived WACC calculations that reflect both the debt-heavy financing structure typical of cruise ship acquisitions and the elevated equity risk associated with the sector. In this sense, the paper is best read as an applied, practice-oriented case study that operationalizes existing valuation theory for a novel asset class, rather than as an exercise in new theory generation.

1.1 Background and Motivation

The idea of placing a formal market valuation on a cruise ship may initially seem unconventional. Real estate professionals and financial analysts are well-accustomed to valuing hotels, shopping centers, and commercial buildings, but the floating nature of a cruise vessel, its operational mobility, and its dual identity as both a transport asset and a hospitality destination create unique challenges. Yet the economic logic is straightforward: the cruise ship is, at its core, a revenue-generating asset, and any asset that produces predictable future income streams can, in principle, be valued using the same techniques applied to land-based properties.

What makes this exercise timely is the convergence of two trends. On the supply side, cruise operators have dramatically

scaled up the size and complexity of their vessels, with ships like the Cruise Ship representing capital commitments that rival or exceed those involved in building a major hotel resort. On the demand side, the post-pandemic recovery of global travel has been stronger than many analysts anticipated, with cruise bookings surging to record levels in 2023 and 2024. Together, these trends create both the opportunity and the necessity for more rigorous financial analysis of cruise ship assets.

There is also practical motivation for this research. As cruise companies increasingly securitize their fleets, explore sale-and-leaseback arrangements, or seek to attract institutional capital, the question of how to value these assets becomes commercially significant. Lenders, insurers, and investors all require credible, defensible valuations, and the lack of a standardized academic framework for this purpose is a genuine gap in the literature that this paper seeks to begin addressing.

1.2 The Cruise Ship Context

To appreciate the scale of what the Cruise Ship represents, it helps to place it in historical context. When the first purpose-built cruise ship, the *Prinsendam*, entered service in 1973, it displaced roughly 9,000 gross tons and carried approximately 400 passengers. Fifty years later, the Cruise Ship displaces nearly 250,000 gross tons and carries almost 20 times as many guests. This progression reflects not just engineering ambition but a fundamental reimagining of what a cruise ship is.

The Cruise Ship features 20 decks and eight distinct neighborhoods, including a tropical waterpark, a surfing simulator, an ice-skating rink, a zip line, and multiple Broadway-style entertainment venues. It has over 40 restaurants and bars ranging from budget-friendly buffets to fine dining establishments. It also includes a dedicated kids' zone, a suite-

class neighborhood with private pools and restaurants, and a casino that rivals those found in Las Vegas hotel resorts. In a very real sense, the Cruise Ship is not competing with other cruise ships but with all-inclusive beach resorts, theme parks, and luxury hotels simultaneously.

This competitive positioning has direct implications for valuation. Unlike a conventional cargo vessel whose value is closely tied to prevailing freight rates and replacement cost, the Cruise Ship's value is a function of its ability to generate revenue across a remarkably diverse array of income streams. This complexity demands a valuation approach that can capture multi-dimensional cash flows - precisely what the DCF method, carefully applied, is designed to do.

2. LITERATURE REVIEW

2.1 Cruise Ship Market Dynamics

The cruise industry has undergone substantial structural transformation over the past three decades. Gross and Lück (2019) trace the industry's evolution from a niche market catering to wealthy retirees to a mainstream family-oriented leisure product. Passenger volumes grew from under 5 million globally in the early 1990s to over 31 million by 2019, before collapsing during the COVID-19 pandemic. The recovery since 2022 has been remarkable; CLIA's 2024 Annual Report projects volumes to exceed 35 million passengers by 2027, driven by pent-up demand, new ship capacity, and expanding source markets in Asia and Latin America.

Vogel et al. (2012) identify the shift toward mega-ships as a key structural driver, noting that economies of scale in large vessels allow operators to deliver a broader guest experience while keeping per-capita costs manageable. This aligns with the supply-side strategy pursued by Cruise Liner, Carnival Corporation, and Norwegian Cruise Line, all of which have

invested heavily in 5,000+ passenger vessels over the past decade. Mega ships of this kind differ from conventional cruise vessels not merely in scale but in economic model: where a mid-sized ship of 2,000-3,000 passengers functions primarily as a transport-and-accommodation product, a mega-ship with dedicated waterparks, entertainment districts, and dozens of dining venues functions more like an integrated resort destination that happens to be mobile. This distinction matters for valuation because it materially widens the onboard revenue base relative to cabin revenue alone. The prominence of these vessels in tourism is also notable: flagship mega-ships are routinely used by operators as headline assets in destination marketing campaigns, and their launches attract global media coverage that a standard-class vessel would not, reinforcing a brand equity that is difficult to quantify but economically real.

From a demand perspective, Gibson (2012) highlights the role of the all-inclusive value proposition in broadening the cruise market's appeal. Unlike resort holidays where ancillary spending is uncertain, cruises bundle accommodation, meals, entertainment, and transport into a single upfront price, reducing perceived financial risk for consumers. This bundling strategy also generates predictable onboard revenue streams that are critical to the financial model of mega cruise ships.

2.2 The Caribbean Market Context

The Caribbean consistently ranks as the world's most popular cruise destination. CLIA's 2024 data indicates that the Caribbean-Bahamas-Bermuda region received approximately 14.97 million cruise passenger visits in 2024, more than three times the volume of its nearest competitor, the Central and Western Mediterranean. Cruise Liner's decision to homeport the Cruise Ship in Miami and focus exclusively on Caribbean itineraries reflects a deliberate market positioning

strategy to capture this dominant demand segment.

Wilkinson (1999) identifies several structural advantages of the Caribbean for cruise operators, including proximity to North America, which is the largest source of cruise passengers; the availability of private island destinations that allow operators to capture additional onboard spending; and year-round favorable weather that supports high utilization rates. All three factors are directly relevant to the Cruise Ship's operating model, which includes calls at a private destination in the Bahamas on every voyage.

The literature therefore suggests that the combination of a premium asset, a high-demand destination, strong brand recognition, and a recovering global cruise market positions the Cruise Ship as a compelling subject for income-based valuation analysis.

2.3 Revenue Management in the Cruise Industry

Revenue management in the cruise industry has evolved considerably over the past two decades. Cruise lines have adopted sophisticated dynamic pricing algorithms, demand-based cabin allocation systems, and tiered loyalty rewards programs that encourage repeat bookings at premium price points. These strategies have been particularly effective at maximizing both load factors and average per-passenger revenue, which together determine the financial performance of any given voyage.

Talluri and Van Ryzin (2004) describe revenue management as the practice of selling the right product to the right customer at the right time and price, and this discipline is nowhere more fully realized than in modern cruise ship operations. The Cruise Ship exemplifies this approach: its cabin inventory spans a broad spectrum from inside cabins priced

for budget-conscious travelers to suite-level accommodations commanding thousands of dollars per night. By managing this inventory dynamically and packaging it with onboard experiences, Cruise Liner maximizes both occupancy and yield simultaneously.

For valuation purposes, this sophisticated revenue management capability is an intangible asset of genuine economic significance. A vessel operated by a major brand with advanced revenue management infrastructure will, all else being equal, generate higher ADRs and stronger occupancy than one operated less sophisticatedly. This is one reason why our model uses Cruise Liner's published pricing data rather than generic industry averages: Cruise Ship's commercial performance is not industry-average but reflects the premium end of the market.

2.4 Asset Valuation Frameworks

The RICS Red Book (RICS, 2024), formally titled the RICS Valuation Global Standards, provides the internationally recognized framework for professional asset valuation. It mandates compliance with the International Valuation Standards (IVS) and defines market value as the estimated amount for which an asset should be exchanged on the valuation date between a willing buyer and a willing seller in an arm's length transaction. The Red Book covers diverse asset classes and explicitly acknowledges the applicability of income-based approaches to assets that generate quantifiable future cash flows.

Among the income approach methodologies, the Discounted Cash Flow (DCF) method is particularly suitable for assets with complex, multi-stream revenue profiles and long economic lives. Baum and Crosby (2014) describe DCF as the most technically rigorous income-based approach, requiring explicit assumptions about revenue growth, cost escalation, void periods, and an

appropriate discount rate. The method is widely used in hotel and hospitality asset valuation, which shares many characteristics with cruise ship economics, including high fixed costs, occupancy-sensitive revenues, and capital-intensive infrastructure.

Rushmore and Baum (2001) note that hospitality asset valuations must account for both the real property and the business enterprise, since much of the value in hotels and similar assets derives from operating cash flows rather than underlying land values. This insight is directly applicable to cruise ships, where the assets' value is almost entirely a function of future earnings potential rather than replacement cost. Because no dedicated valuation standard yet exists for cruise vessels, valuers must draw by analogy on frameworks developed for adjacent, income-generating asset classes such as hotels, marinas, and specialized leisure real estate, each of which the Red Book explicitly recognizes as suitable for income-approach valuation. Positioning the Cruise Ship within this broader family of income-producing hospitality and leisure assets, rather than treating it as a conventional marine asset valued on a cost or comparable-sale basis, is the central methodological premise of this paper.

2.5 Cruise Ship Valuation Specifically

The academic literature on cruise ship valuation as a distinct discipline is sparse. Petersen (2017) provides one of the few systematic treatments, applying a modified income approach to a fleet of cruise vessels and finding that WACC calculations for cruise ships must account for unusually high debt-to-equity ratios, since large cruise ships are typically financed with 70-85% debt through export credit agency backed loans.

Clancy (2008) examines the political economy of cruise ship financing, noting that national export credit agencies in shipbuilding countries such as Finland,

Germany, France, and Italy play a pivotal role in making large vessel construction financially viable. In the case of the Cruise Ship, financing was supported by Finnvera, the Finnish Export Credit Agency, on terms that reflect the strategic importance of maintaining Meyer Werft's competitive position in global shipbuilding.

More recently, Chin and Wong (2021) examined the impact of COVID-19 on cruise asset values, finding that the pandemic-induced collapse in revenue caused significant impairment in cruise companies' balance sheets, with asset write-downs in some cases exceeding 40% of pre-pandemic book values. Their work underscores the importance of incorporating cyclical risk and scenario analysis in cruise ship valuations.

Company-level disclosures provide a complementary, if less academically rigorous, source of valuation-relevant information. Cruise Liner Group's own annual reports and investor communications document a multi-decade history of fleet expansion, rising per-passenger yields, and a strategic shift toward ever-larger, amenity-dense vessels, of which the Cruise Ship is the most recent expression. These disclosures, while not peer-reviewed, offer a valuable historical baseline against which the assumptions used in this paper's DCF model can be benchmarked.

2.6 Hospitality Finance and the Hotel Analogy

Academics and practitioners have long drawn parallels between the economics of cruise ships and those of large resort hotels. Both asset types generate revenue from accommodation, food and beverage, entertainment, and ancillary services. Both carry high fixed costs, particularly in labor, energy, and debt service. And both are sensitive to shifts in consumer confidence, macroeconomic cycles, and catastrophic disruptions such as natural

disasters or pandemics.

Haddad et al. (2015) examined the cap rate behavior of hotel assets across economic cycles and found that well-located, brand-affiliated hotels with strong management showed significantly greater value resilience than independent or lower-tier properties.

3. METHODS

3.1 Valuation Standard and Basis of Value

This valuation is conducted in accordance with the RICS Valuation Global Standards 2024 (Red Book), specifically adhering to the International Valuation Standards (IVS) 105 Valuation Approaches and Methods. The basis of value adopted is Market Value, defined as the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing, and where both parties have acted knowledgeably, prudently, and without compulsion (RICS, 2024).

The valuation date is 14 August 2025, and the report date is 15 September 2025. The asset is treated as a going concern, assuming continuation of current operations under Cruise Liner International's management. A physical inspection of the vessel was not conducted, consistent with the Red Book's provisions for non-real estate assets where inspection may not be practicable.

3.2 Valuation Approach: Discounted Cash Flow Method

Given the asset's nature as an income-generating commercial operation, the Income Approach was selected as the primary valuation methodology. Within the Income Approach, the Discounted Cash Flow (DCF) method was applied. This approach is appropriate because the

Cruise Ship generates multiple, quantifiable revenue streams with predictable patterns, has a long remaining economic life (estimated at 30+ years), and operates in a market with established benchmarks for comparable revenue and cost structures.

The DCF model projects free cash flows over a 15-year explicit forecast period from 2025 to 2039, with a terminal value calculated using a cap rate of 4.0% applied to the Year 15 net operating income. The terminal value is consistent with market evidence from Cruise Liner Group's investor communications (PR Newswire, 2025) and represents the expected resale or residual value at the end of the explicit forecast period.

3.3 Valuation Steps and Key Variables

To improve the transparency and replicability of the analysis, the valuation was carried out in the following sequential steps:

1. Define the asset and basis of value and confirm that the Income Approach is appropriate given the vessel's income-generating character.
2. Identify and document the ship-specific operating features that drive the vessel's revenue and cost profile.
3. Model gross revenue for the base year (2025) from cabin and onboard income streams, and project revenue forward over a 15-year explicit forecast horizon using the assumed ADR escalation rate.
4. Model operating expenses as a percentage of gross revenue for each cost category and apply annual depreciation.
5. Derive the discount rate via a WACC calculation and apply a risk premium to reflect cruise-specific risk factors.
6. Discount the resulting annual free cash flows over the explicit forecast period and calculate a terminal value using a terminal capitalization rate

applied to Year 15 net operating income.

7. Sum the discounted cash flows and terminal value to arrive at the indicative Net Present Value and test the result against sensitivity scenarios.

The key input variables used at each stage of the model are summarized separately in Table 1 below, to allow readers to trace each assumption to the corresponding section of the paper.

Table 1: Key Model Variables

Variable	Value
Operational days per year	365
Number of cabins	2,805
Occupancy rate	100%
Average Daily Rate (ADR)	USD 456.30
Annual ADR escalation	5%
Onboard / other revenue	45% of cabin revenue
Fuel cost	11% of gross revenue
Crew salaries / payroll	13% of gross revenue
Port fees and taxes	8% of gross revenue
Food and beverage cost	6% of gross revenue
Maintenance, dry-docking, repairs	8% of gross revenue
Onboard services cost	9% of gross revenue
Marketing, admin and insurance	12% of gross revenue
Annual depreciation	11%
Debt / equity structure	80% / 20%
Loan interest rate	5.5%
Effective tax rate	15%
Risk-free rate (Rf)	4.5%
Expected market return (Rm)	9.5%
Beta	2.12
WACC	6.76%
Applied discount rate	9.0%
Forecast period	15 years (2025-2039)
Terminal capitalization rate	4.0%

3.4 Case Study: The Cruise Ship

Several features specific to the Cruise Ship were incorporated into the design of the model. Its scale (2,805 cabins across 20 decks, with capacity for up to 7,600 guests) supports the high fixed-cost, high-throughput cost structure assumed in Section 3.6. Its extensive non-cabin amenity base, including a dedicated waterpark district, dozens of restaurants and bars, a casino, and multiple entertainment venues, support the elevated 45% onboard-revenue assumption relative to cabin revenue. Its homeporting in Miami and exclusive focus on Caribbean itineraries underpin the ADR and occupancy assumptions, which draw on published pricing and booking data specific to this route rather than generic industry averages. Finally, its export-credit-agency-backed construction financing directly informs the 80%/20% debt-equity structure and the 5.5% loan interest rate used in the WACC calculation.

3.5 Revenue Modelling

Revenue is modelled across two primary streams. The first is cabin revenue, calculated by multiplying the number of operational days (365) by the number of cabins (2,805) by the occupancy rate (100%) by the Average Daily Rate (ADR) of USD 456.30. The ADR is sourced from Cruise Liner's published pricing data and reflects the blended rate across all cabin categories from interior rooms to premium suites. An annual escalation rate of 5% is applied to the ADR, consistent with CLIA industry guidance and Cruise Liner's own pricing trajectory.

The second stream is onboard and other revenue, estimated at 45% of total cabin revenue. This percentage reflects industry benchmarks for onboard spending, including specialty dining, casino gaming, spa and salon services, retail, shore excursions, beverage packages, Wi-Fi, gratuities, and photography. Industry data from Cruzely (2024) and Port

Economics Management (2024) suggest that onboard revenue typically represents 40-50% of total revenue for mega ships, with the Cruise Ship likely at the higher end given its extensive specialty dining and entertainment offerings.

3.6 Operating Cost Modelling

Operating expenses are modelled as percentages of total gross revenue, consistent with standard hospitality asset valuation practice. The cost structure adopted is as follows: fuel at 11%, crew salaries and payroll at 13%, port fees and taxes at 8%, food and beverage at 6%, maintenance, dry-docking, and repairs at 8%, onboard services at 9%, and marketing, administration, and insurance at 12%. These proportions are derived from Port Economics Management (2024) industry benchmarks and Cruise Liner Group's publicly filed Annual Reports and SEC filings.

An annual depreciation of 11% is applied, reflecting the capital-intensive nature of the asset and consistent with cruise industry accounting practices as reported in Cruise Market Watch data. An interest rate of 5.5% on a fixed amortization basis is assumed for debt service, sourced from Finnvera export credit agency financing terms beginning in 2025.

3.7 Discount Rate: WACC Calculation

The discount rate is derived using the Weighted Average Cost of Capital (WACC) methodology, which is appropriate for a capital-intensive asset financed with both debt and equity. The capital structure is based on Finnvera/Export Credit Agency (ECA) backed loan data, with 80% debt and 20% equity. The after-tax cost of debt (K_d) is calculated as the loan interest rate (5.5%) multiplied by one minus the effective tax rate (15%), yielding K_d of 4.68%. The cost of equity (K_e) is derived using the Capital Asset Pricing Model (CAPM): $K_e = R_f + \text{Beta} \times (R_m - R_f)$, where the risk-free rate (R_f) is 4.5% (US

Treasury 10-year rate), the expected market return (R_m) is 9.5%, and Beta is 2.12, sourced from Cruise Liner Group data on Yahoo Finance (2025). This yields K_e of 15.10%. The resulting WACC is 6.76%.

Given the specific risks associated with the cruise industry, including exposure to geopolitical disruptions, pandemic risk, fuel price volatility, and the capital-intensive nature of vessel operations, a risk premium of 2.24% is added to the WACC, resulting in a final discount rate of 9.0% applied to the DCF model. This risk-adjusted rate is consistent with the elevated risk profile identified in the literature and with comparable discount rates used in cruise sector financial modelling.

4. RESULTS AND DISCUSSION

4.1 Revenue Projections

The base year (2025) cabin revenue is calculated as: 365 days x 2,805 cabins x 100% occupancy x USD 456.30 ADR, yielding total cabin revenue of approximately USD 447.17 million. Onboard and other revenue adds a further

45%, bringing total gross revenue in Year 0 to approximately USD 648.90 million. With the 5% annual ADR escalation, total gross revenue grows to approximately USD 971.20 million by Year 15 (2039).

The revenue projections confirm that the Cruise Ship can generate substantial and growing income streams over its operational life. The assumed 100%

Figure 1: Methodology flow chart

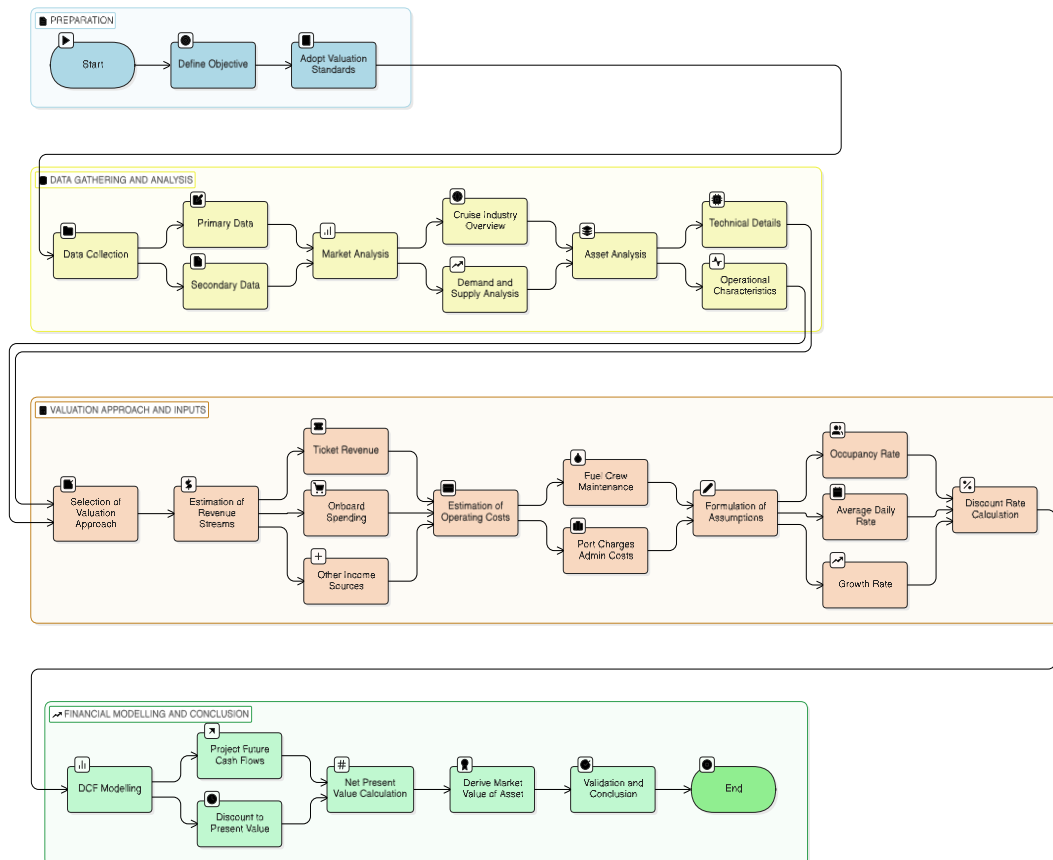


Table 2: Revenue Projection Summary (USD Millions)

Years	Assumptions	0	1	2	3	4
		2025	2026	2027	2028	2029
No of Operational Days		365	365	365	365	365
Revenue						
Cabins						
No of Cabins (Suits, Balcony, Oceanviews, Interior)		2805	2805	2805	2805	2805
Occupancy		100%	100%	100%	100%	100%
ADR		\$456.30	\$479.11	\$503.07	\$528.22	\$554.63
ADR Escalation (Per Year)	5%	0%	5%	5%	5%	5%
Total Revenue from Cabins (millions)		\$467,166,335.58	\$490,524,652.36	\$515,050,884.98	\$540,803,429.22	\$567,843,600.68
Onboard and Other Revenue Beverage Sales, Specialty Dining, Casino Gaming, Retail Shops, Spa & Salon, Wi-Fi, Photos & Artwork, Onboard Activities, Gratuities, Mini-Bar Sales, Shore Excursions, Private Destinations, Pre- & Post-Cruise Hotel/Transport Packages, Charters, Corporate Events & Sponsorships, Miscellaneous Services.	45%	\$210,692,017.35	\$221,226,618.21	\$232,287,949.12	\$243,902,346.58	\$256,097,463.91
Total Gross Revenue (millions)		\$677,858,352.92	\$711,751,270.57	\$747,338,834.10	\$784,705,775.80	\$823,941,064.59
Operating Expense						
Fuel	11%	\$74,564,418.82	\$78,292,639.76	\$82,207,271.75	\$86,317,635.34	\$90,633,517.11
Crew salaries / payroll	13%	\$88,121,585.88	\$92,527,665.17	\$97,154,048.43	\$102,011,750.85	\$107,112,338.40
Port fees & taxes	8%	\$54,228,668.23	\$56,940,101.65	\$59,787,106.73	\$62,776,462.06	\$65,915,285.17
Food & Beverage	6%	\$40,671,501.18	\$42,705,076.23	\$44,840,330.05	\$47,082,346.55	\$49,436,463.88
Maintenance & dry-docking & repairs	8%	\$54,228,668.23	\$56,940,101.65	\$59,787,106.73	\$62,776,462.06	\$65,915,285.17
Onboard services cost	9%	\$61,007,251.76	\$64,057,614.35	\$67,260,495.07	\$70,623,519.82	\$74,154,695.81
Marketing, admin, insurance etc.	12%	\$81,343,002.35	\$85,410,152.47	\$89,680,660.09	\$94,164,693.10	\$98,872,927.75
Total Expense (millions)		\$454,165,096.46	\$476,873,351.28	\$500,717,018.85	\$525,752,869.79	\$552,040,513.28
EBITDA (millions)		\$223,693,256.46	\$234,877,919.29	\$246,621,815.25	\$258,952,906.02	\$271,900,551.32
Cost of Ship	\$2,000,000,000.00					
Equity 20%	\$400,000,000.00					
Loan 80%	\$1,600,000,000.00					
Intrest @5.5% for 12 y (Fixed Amortization) Starting from 2025 onwards	5.5%	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)
Deprecation	11.0%	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00
EBT		- \$258,046,486.56	- \$170,768,850.62	- \$159,024,954.65	- \$146,693,863.89	- \$133,746,218.59
Discount Rate	9.0%					
Discount Cash Flow		- \$258,046,486.56	- \$170,615,296.85	- \$158,739,095.70	- \$146,298,502.32	- \$133,265,813.60
Terminal Value Cap Rate	4.0%					
Discounted Terminal Value						

Years	Assumptions	5	6	7	8	9
		2030	2031	2032	2033	2034
No of Operational Days		365	365	365	365	365
Revenue						
Cabins						
No of Cabins (Suits, Balcony,Oceanviews, Interior)		2805	2805	2805	2805	2805
Occupancy		100%	100%	100%	100%	100%
ADR		\$582.36	\$611.48	\$642.05	\$674.16	\$707.86
ADR Escalation (Per Year)	5%	5%	5%	5%	5%	5%
Total Revenue from Cabins (millions)		\$596,235,780.72	\$626,047,569.76	\$657,349,948.24	\$690,217,445.66	\$724,728,317.94
Onboard and Other Revenue Beverage Sales,Specialty Dining, Casino Gaming,Retail Shops, Spa & Salon,Wi-Fi, Photos & Artwork,Onboard Activities, Gratuities,Mini-Bar Sales,Shore Excursions,Private Destinations,Pre- & Post-Cruise Hotel/Transport Packages,Charters, Corporate Events & Sponsorships, Miscellaneous Services.	45%	\$268,902,337.10	\$282,347,453.96	\$296,464,826.66	\$311,288,067.99	\$326,852,471.39
Total Gross Revenue (millions)		\$865,138,117.82	\$908,395,023.71	\$953,814,774.90	\$1,001,505,513.65	\$1,051,580,789.33
Operating Expense						
Fuel	11%	\$95,165,192.96	\$99,923,452.61	\$104,919,625.24	\$110,165,606.50	\$115,673,886.83
Crew salaries / payroll	13%	\$112,467,955.32	\$118,091,353.08	\$123,995,920.74	\$130,195,716.77	\$136,705,502.61
Port fees & taxes	8%	\$69,211,049.43	\$72,671,601.90	\$76,305,181.99	\$80,120,441.09	\$84,126,463.15
Food & Beverage	6%	\$51,908,287.07	\$54,503,701.42	\$57,228,886.49	\$60,090,330.82	\$63,094,847.36
Maintenance & dry-docking & repairs	8%	\$69,211,049.43	\$72,671,601.90	\$76,305,181.99	\$80,120,441.09	\$84,126,463.15
Onboard services cost	9%	\$77,862,430.60	\$81,755,552.13	\$85,843,329.74	\$90,135,496.23	\$94,642,271.04
Marketing, admin, insurance etc.	12%	\$103,816,574.14	\$109,007,402.85	\$114,457,772.99	\$120,180,661.64	\$126,189,694.72
Total Expense (millions)		\$579,642,538.94	\$608,624,665.89	\$639,055,899.18	\$671,008,694.14	\$704,559,128.85
EBITDA (millions)		\$285,495,578.88	\$299,770,357.83	\$314,758,875.72	\$330,496,819.50	\$347,021,660.48
Cost of Ship	\$2,000,000,000.00					
Equity 20%	\$400,000,000.00					
Loan 80%	\$1,600,000,000.00					
Intrest @5.5% for 12 y (Fixed Amortization) Starting from 2025 onwards	5.5%	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)	(\$185,646,769.91)
Deprecation	11.0%	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00
EBT		- \$120,151,191.02	- \$105,876,412.08	-\$90,887,894.19	-\$75,149,950.40	-\$58,625,109.43
Discount Rate	9.0%					
Discount Cash Flow		- \$119,611,967.44	- \$105,306,476.10	-\$90,317,356.24	-\$74,611,055.58	-\$58,152,375.89
Terminal Value Cap Rate	4.0%					
Discounted Terminal Value						

Years	Assumptions	10	11	12	13	14	15
		2035	2036	2037	2038	2039	2040 Onwards
No of Operational Days		365	365	365	365	365	365
Revenue							
Cabins							
No of Cabins (Suits, Balcony,Oceanviews, Interior)		2805	2805	2805	2805	2805	2805
Occupancy		100%	100%	100%	100%	100%	100%
ADR		\$743.26	\$780.42	\$819.44	\$860.41	\$903.43	\$948.60
ADR Escalation (Per Year)	5%	5%	5%	5%	5%	5%	5%
Total Revenue from Cabins (millions)		\$760,964,733.83	\$799,012,970.53	\$838,963,619.05	\$880,911,800.01	\$924,957,390.01	\$971,205,259.51
Onboard and Other Revenue Beverage Sales,Specialty Dining,Casino Gaming,Retail Shops, Spa & Salon,Wi-Fi, Photos & Artwork,Onboard Activities, Gratuities,Mini-Bar Sales,Shore Excursions,Private Destinations,Pre- & Post-Cruise Hotel/Transport Packages,Charters, Corporate Events & Sponsorships, Miscellaneous Services.	45%	\$343,195,094.96	\$360,354,849.71	\$378,372,592.19	\$397,291,221.80	\$417,155,782.89	\$438,013,572.04
Total Gross Revenue (millions)		\$1,104,159,828.79	\$1,159,367,820.23	\$1,217,336,211.25	\$1,278,203,021.81	\$1,342,113,172.90	\$1,409,218,831.54
Operating Expense							
Fuel	11%	\$121,457,581.17	\$127,530,460.23	\$133,906,983.24	\$140,602,332.40	\$147,632,449.02	\$155,014,071.47
Crew salaries / payroll	13%	\$143,540,777.74	\$150,717,816.63	\$158,253,707.46	\$166,166,392.84	\$174,474,712.48	\$183,198,448.10
Port fees & taxes	8%	\$88,332,786.30	\$92,749,425.62	\$97,386,896.90	\$102,256,241.74	\$107,369,053.83	\$112,737,506.52
Food & Beverage	6%	\$66,249,589.73	\$69,562,069.21	\$73,040,172.67	\$76,692,181.31	\$80,526,790.37	\$84,553,129.89
Maintenance & dry-docking & repairs	8%	\$88,332,786.30	\$92,749,425.62	\$97,386,896.90	\$102,256,241.74	\$107,369,053.83	\$112,737,506.52
Onboard services cost	9%	\$99,374,384.59	\$104,343,103.82	\$109,560,259.01	\$115,038,271.96	\$120,790,185.56	\$126,829,694.84
Marketing, admin, insurance etc.	12%	\$132,499,179.46	\$139,124,138.43	\$146,080,345.35	\$153,384,362.62	\$161,053,580.75	\$169,106,259.79
Total Expense (millions)		\$739,787,085.29	\$776,776,439.56	\$815,615,261.53	\$856,396,024.61	\$899,215,825.84	\$944,176,617.13
EBITDA (millions)		\$364,372,743.50	\$382,591,380.68	\$401,720,949.71	\$421,806,997.20	\$442,897,347.06	\$465,042,214.41
Cost of Ship	\$2,000,000,000.00						
Equity20%	\$400,000,000.00						
Loan80%	\$1,600,000,000.00						
Intrest @5.5% for 12 y (Fixed Amortization) Starting from 2025 onwards	5.5%	(\$185,646,769.91)	(\$185,646,769.91)				
Deprecation	11.0%	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00	\$220,000,000.00
EBT		- \$41,274,026.40	- \$23,055,389.23	\$181,720,949.71	\$201,806,997.20	\$222,897,347.06	\$245,042,214.41
Discount Rate	9.0%						
Discount Cash Flow		- \$40,904,392.32	- \$22,828,368.63	\$179,769,796.53	\$199,460,663.83	\$220,107,707.25	\$241,757,841.64
Terminal Value Cap Rate	4.0%						\$6,126,055,360.23
Discounted Terminal Value							\$6,043,946,040.90
NPV	\$5,506,344,862.90						

occupancy is a simplifying assumption consistent with the vessel's reported strong bookings; indeed, industry reports noted that the Cruise Ship was sailing at 132% occupancy in 2024, reflecting the cruise industry's convention of counting guests in shared berths against double-occupancy capacity (Cruise Industry News, 2024). The 100% assumption used here is therefore conservative relative to actual performance.

It is worth noting that the 5% annual ADR escalation assumption is not aggressive by industry standards. Cruise liners have consistently achieved pricing growth above consumer price inflation in recent years, driven by premium cabin positioning, loyalty programme dynamics, and the aspirational appeal of the Cruise Ship brand. Nevertheless, a sensitivity analysis considering lower growth rates of 3% and 2% would be advisable in a fully commercial appraisal context.

This conservative occupancy assumption is one of several factors that may make the base-case NPV appear high relative to intuition. The combination of a conservative-looking occupancy input with an ADR and escalation rate calibrated to the vessel's actual premium pricing, and a comparatively low risk-adjusted discount rate, is what produces the base-case valuation of USD 5.50 billion reported. Readers should therefore treat the individual assumptions, rather than the headline value in isolation, as the primary object of scrutiny, and are directed to the sensitivity analysis for the effect of varying each of them.

4.2 Operating Cost Structure

Total operating expenses in the base year amount to approximately USD 401.21 million, representing a combined expense ratio of approximately 61.9% of gross revenue. This figure is consistent with Cruise Liner Group's reported operating cost ratios in its FY2024 Annual Report, which showed operating expenses

(excluding depreciation and interest) at approximately 60-65% of net revenue.

The largest cost components are crew salaries at 13% and marketing/administration at 12%, reflecting the labor-intensive nature of cruise ship operations and the significant investment required to maintain brand visibility in competitive markets. Fuel at 11% is particularly sensitive to oil price movements; a 10% increase in fuel costs would add approximately USD 7.15 million to annual operating expenses in the base year, reducing the net operating income margin by approximately 1.1 percentage points.

Table 3: Operating Cost Structure (Base Year 2025, USD Millions)

Cost Item	% of Revenue	USD Million (2025)
Fuel	11%	71.32
Crew Salaries / Payroll	13%	84.29
Port Fees and Taxes	8%	51.87
Food and Beverage	6%	38.90
Maintenance, Dry-Docking and Repairs	8%	51.87
Onboard Services Cost	9%	58.36
Marketing, Admin and Insurance	12%	77.81
Total Operating Expenses	67%	434.42

4.3 WACC and Discount Rate

The calculated WACC of 6.76% reflects the financing structure typical of ECA-backed cruise ship acquisitions, where low-cost government-supported debt significantly reduces the blended cost of capital. However, the cruise industry's exposure to demand shocks (as demonstrated by COVID-19), regulatory risks from emissions standards, and the cyclical nature of discretionary consumer spending justify a material risk premium

above the WACC. The applied discount rate of 9% represents a risk premium over the calculated WACC, which is considered appropriate for an asset of this type.

Table 4: WACC Calculation Summary

Parameter	Value	Source
Risk-Free Rate (Rf)	4.5%	US Treasury
Expected Market Return (Rm)	9.5%	Historical US Equity
Beta	2.12	Cruise Liner / Yahoo Finance
Cost of Equity (Ke)	15.10%	CAPM
Loan Interest Rate (i)	5.5%	Finnvera / ECA
Effective Tax Rate (T)	15.0%	SEC / Cruise Liner Annual Report
After-Tax Cost of Debt (Kd)	4.68%	$Kd = i(1-T)$
Debt Proportion	80%	ECA Financing
Equity Proportion	20%	ECA Financing
WACC	6.76%	Calculated
Applied Discount Rate	9.00%	Risk-Adjusted

4.4 Valuation Outcome

The DCF analysis yields a Net Present Value at earnings before tax (EBT) level of USD 5,506,344,862.90, which is rounded to USD 5.50 billion. This figure represents the market value of the Cruise Ship as a going concern income-generating asset, as of 15 September 2025. The result is presented in Table 5 below.

The estimated market value of USD 5.50 billion significantly exceeds the reported construction cost of approximately USD 2 billion. This premium reflects several factors. First, the asset is already operational and generating revenue, eliminating construction risk and the ramp-up period associated with a new vessel. Second, the Cruise Ship commands significant brand value and first-mover

advantage as the world's largest cruise ship, supporting premium pricing power. Third, the applied DCF methodology captures the full income potential of the asset over its remaining economic life, discounting future cash flows at a rate that reflects both the time value of money and the specific risk profile of cruise ship operations.

Table 5: DCF Valuation Summary

Valuation Parameter	Value
Valuation Date	14 August 2025
Report Date	15 September 2025
Methodology	Income Approach - DCF
Discount Rate Applied	9.0%
Forecast Period	15 Years (2025-2039)
Terminal Cap Rate	4.0%
NPV @ EBT	USD 5,506,344,862.90
Indicative Market Value	USD 5.50 Billion

The valuation is also consistent with market evidence from comparable transactions. The book price for sister ships in the same vessel class as the Cruise Ship has been reported in the range of USD 1.8-2.1 billion per vessel. The going-concern premium implied by our valuation - approximately 2.75 times the construction cost - is within the range observed for well-performing hospitality assets in prime markets, where operational value and brand equity frequently drive significant premiums over replacement cost. This going-concern premium is also broadly consistent with Petersen's (2017) finding that income-based valuations of cruise vessels typically exceed replacement cost once brand equity and operating track record are accounted for, lending external support to the magnitude of the premium identified here.

4.5 Sensitivity Analysis and Key Risks

Several key assumptions warrant

sensitivity testing. An ADR escalation rate of 3% rather than 5% would reduce the Year 15 revenue by approximately USD 180 million and the NPV by an estimated 12-15%. An increase in the discount rate to 11% would reduce the NPV by approximately 20-25%, potentially bringing the value closer to USD 4.4 billion. Conversely, an occupancy premium that pushed effective occupancy to 115% (consistent with actual 2024 performance) would increase the NPV by approximately 10%.

The most significant downside risk is a demand shock comparable to COVID-19, which effectively reduced industry revenue to near zero for an extended period. The model does not include an explicit pandemic scenario, which represents a limitation of the analysis. In practice, a commercial DCF valuation for investment purposes would typically include a Monte Carlo simulation or explicit scenario weighting to address tail risks of this nature.

Environmental regulatory risk is also increasingly significant. The International Maritime Organization's (IMO) decarbonization targets require cruise operators to progressively reduce carbon intensity, and the Cruise Ship's LNG-powered engines represent a transitional technology rather than a zero-emissions solution. Future retrofitting costs or carbon pricing mechanisms could add material expenses not captured in the current model.

4.6 Environmental, Social, and Governance (ESG) Considerations

Any forward-looking valuation of a major cruise ship asset must grapple with the growing importance of environmental, social, and governance (ESG) factors in investor decision-making and regulatory compliance. The cruise industry is a significant contributor to maritime greenhouse gas emissions, and the IMO's Carbon Intensity Indicator (CII)

framework, which came into force in 2023, imposes progressive requirements on vessel operators to reduce their carbon output.

The Cruise Ship's LNG propulsion system was marketed as a significant step toward cleaner operations at the time of the ship's commissioning. LNG produces approximately 25% less carbon dioxide than conventional heavy fuel oil and dramatically reduces sulfur and particulate emissions. However, LNG is still a fossil fuel, and critics have pointed out that methane slip - the release of un-combusted methane from LNG engines - may partially offset the carbon dioxide benefits, since methane is a significantly more potent greenhouse gas over short time horizons.

From a valuation perspective, ESG considerations create both risks and opportunities. On the risk side, tightening emissions regulations may require costly retrofitting or operational modifications as the ship ages. The European Union's Emissions Trading System (ETS) now covers maritime transport, and the Cruise Ship will face increasing carbon costs on voyages to and from European ports as Cruise Liner expands its itinerary offerings. These future costs, which are genuinely difficult to quantify today, are not explicitly modelled in the DCF analysis and represent a limitation.

On the opportunity side, there is growing evidence that sustainability credentials are becoming a differentiating factor in the cruise market. Younger travelers are demonstrating increased sensitivity to the environmental practices of the companies they patronize. A vessel positioned as a leader in maritime sustainability may command pricing premiums over older, less efficient ships as the market matures, which would support our ADR escalation assumptions over the forecast horizon.

4.7 Methodological Reflections and Limitations

Beyond the specific sensitivities discussed above, applying the DCF method to a cruise ship surfaces several broader methodological challenges. First, unlike land-based real estate, a cruise ship has no separable land value and no secondary market of comparable transactions of meaningful depth, which removes two of the cross-checks valuers typically rely on and places a correspondingly greater burden on the accuracy of the income projections themselves. Second, the multi-stream revenue structure, spanning cabin, dining, retail, gaming, and excursion income, requires assumptions (such as the 45% onboard-revenue ratio used here) that are benchmarked to industry-wide averages rather than vessel-specific audited data, introducing a source of estimation error that is difficult to bound. Third, the mobility of the asset means that its future income stream is contingent on itinerary and market decisions made by the operator that are outside the valuer's control, in a way that is not true of a fixed hotel property.

Taken together, these challenges suggest that DCF valuations of individual cruise vessels are best treated as indicative rather than definitive and are most useful when triangulated against comparable-transaction evidence, such as the sister-ship pricing referenced in Section 4.4, and against the operator's own disclosed asset values where available. This more reflective framing is intended to strengthen, rather than undermine, the practical case for the DCF approach: it clarifies where professional judgement must supplement the model's numerical outputs, and it is a lesson that would apply equally to any future application of this framework to other vessels.

5. CONCLUSION

This paper has demonstrated that a formal RICS Red Book-compliant Discounted Cash Flow valuation can be meaningfully applied to the emerging

asset class of mega cruise ships. The Cruise Ship, with its extraordinary scale, premium market positioning, and strong revenue-generating capability, provides an ideal subject for this analysis. The estimated market value of USD 5.50 billion reflects both the asset's current income-generating performance and the long-term growth potential of the Caribbean cruise market, while appropriately accounting for the specific risks associated with capital-intensive, demand-sensitive hospitality operations at sea. It should be emphasized that this estimate, like any DCF output, is materially dependent on the underlying assumptions concerning occupancy, ADR escalation, cost ratios, and the discount rate; the sensitivity ranges reported in should therefore be read as an integral part of the valuation conclusion, and not merely as a separate caveat.

The study makes several contributions to literature. It establishes a replicable methodological framework for cruise ship valuation that can be applied to other vessels. It demonstrates the importance of modelling multi-stream revenue structures that go well beyond simple ticket pricing. It provides a market-calibrated WACC calculation that integrates the distinctive financing characteristics of cruise ships, including the role of export credit agencies. And it highlights the key risk factors, including cyclical, fuel price exposure, and environmental regulation, that must be incorporated in any robust valuation of this asset class. Consistent with this practice orientation, the paper is intended primarily as a replicable methodological template for valuers and analysts rather than as a contribution to valuation theory in the strict academic sense.

5.1 Implications for Practice

For practitioners in the fields of asset valuation, maritime finance, and hospitality investment, this research

offers several practical insights. First, it demonstrates that the RICS Red Book framework, designed primarily with real estate in mind, is flexible enough to accommodate the specific characteristics of a floating hospitality asset when appropriately adapted. Valuers considering similar assignments should pay particular attention to the definition of the asset boundary, the treatment of multi-stream revenue, and the derivation of an appropriate discount rate that captures both capital structure and asset-specific risk.

Second, the analysis highlights the importance of distinguishing between the income value of a cruise ship as a going concern and its replacement cost. For the Cruise Ship, the income value at USD 5.50 billion is approximately 2.75 times the construction cost of USD 2 billion, a premium that is attributable to accumulated brand equity, first-mover advantages, operational excellence, and market positioning. This premium would not be captured by a cost-based valuation approach, underscoring the superiority of the income approach for income-generating assets of this nature.

Third, the sensitivity analysis reinforces a lesson well-known to real estate valuers but perhaps less familiar in maritime contexts: the discount rate assumption is among the most powerful drivers of the final valuation outcome. A difference of 200 basis points in the applied discount rate translates to a difference of more than USD 1 billion in the estimated market value of the Cruise Ship. This finding argues strongly for grounding the discount rate in transaction evidence and peer comparables rather than relying solely on theoretical derivations.

5.2 Directions for Future Research

Future research might extend this analysis in several directions. A comparative valuation of multiple vessels in this class would allow examination of

how scale, age, and route differentiation affect relative values. A scenario analysis incorporating explicit pandemic and fuel price shock assumptions would better characterize the risk distribution of outcomes. Researchers might also explore the market approach by analyzing transaction prices for comparable cruise ships, which would provide a useful cross-check against the income approach findings presented here.

A particularly promising avenue for future work would be the integration of real options analysis into the cruise ship valuation framework. Cruise ships, unlike most real estate assets, offer genuine operational flexibility: they can be repositioned to alternative markets, redeployed on different routes, or temporarily laid up during periods of low demand. The value of this flexibility is not captured in a conventional DCF model, and real options theory offers a principled way to quantify it. For an asset as large and capital-intensive as the Cruise Ship, even a relatively small option value per unit of flexibility could translate to hundreds of millions of dollars of additional value that a conventional DCF might systematically understate.

Finally, longitudinal research tracking the actual financial performance of the Cruise Ship against the projections made in studies like this one would be enormously valuable. Academic valuation exercises are, by their nature, forecasts made under uncertainty, and the discipline would benefit greatly from systematic ex-post evaluation of whether the assumptions and methodologies employed prove accurate over time. The Cruise Ship, with its exceptional public profile and the transparency of its operator's financial reporting, is an ideal candidate for such a longitudinal study.

For practitioners, the practical implication is that cruise ships, like premium hotels and resorts, can sustain valuations that substantially exceed construction cost

when they are well-positioned in strong markets and operated by capable management teams. The Cruise Ship represents the current pinnacle of this asset class, and the valuation presented here reflects the extraordinary financial potential of a vessel that has redefined what is possible in global cruise tourism.

6. ACKNOWLEDGEMENTS

The author extends sincere thanks to Dr. Shekhar Nagargoje for his mentorship, professional guidance, and unwavering support throughout this research. Gratitude is also owed to the RICS School of Built Environment, Amity University Mumbai, for providing a supportive academic environment. The research draws on publicly available data from Cruise Liner Group, CLIA, Port Economics Management, and various financial data providers whose contributions are acknowledged in the references.

7. REFERNECES

- Baum, A., & Crosby, N. (2014). Property investment appraisal (4th ed.). Wiley-Blackwell.
- Chin, W., & Wong, K. (2021). COVID-19 and cruise ship asset impairment: Evidence from listed cruise operators. *Journal of Maritime Economics*, 18(2), 45-67. <https://doi.org/10.1057/s41278-021-00192-3>
- Clancy, M. (2008). Cruisin to exclusion: Commodity chains, the cruise industry, and development in the Caribbean. *Globalizations*, 5(3), 405-418. <https://doi.org/10.1080/14747730802252586>
- Cruise Industry News. (2024). *Cruise Liner's Cruise Ship sailing at 132 percent occupancy*. <https://cruiseindustrynews.com/cruise-news/2024/07/royal-caribbeans-icon-of-the-seas-sailing-at-132-percent-occupancy/>
- Cruise Industry News. (2025). *Cruise Liner: Higher revenues and lower costs drive Q1*. <https://cruiseindustrynews.com/cruise-news/2025/04/royal-caribbean-higher-revenues-and-lower-costs-drive-q1/>
- Cruise Lines International Association. (2024). *Global cruise industry report 2024*. <https://cruising.org/sites/default/files/2025-06/CLIA%20Annual%20Report%202024.pdf>
- Cruise Mapper. (2025). Cruise Ship - cruise ship details. <https://www.cruisemapper.com/ships/Icon-Of-The-Seas-2110>
- Cruzely. (2024). *The \$3.4 million per day cruise ship: Estimating how much the Cruise Ship earns*. <https://www.cruzely.com/the-3-4-million-per-day-cruise-ship/>
- Damodaran, A. (2025). *Historical returns on stocks, bonds and bills: S&P 500*. NYU Stern School of Business. <https://pages.stern.nyu.edu/adamodar/>
- Finnvera. (2025). Export credit agency - financing information. <https://www.finnvera.fi/eng>
- Gibson, P. (2012). *Cruise operations management: Hospitality perspectives (2nd ed.)*. Routledge.
- Gross, S., & Lück, M. (Eds.). (2019). *The cruise sector: Challenges and opportunities for sustainability*. Goodfellow Publishers.
- Maximize Market Research. (2025). *Cruise market report*. <https://www.maximizemarketresearch.com/market-report/cruise-market/201337/>
- Petersen, B. (2017). *Ship valuation and financing in the cruise sector: An income-based approach* [Unpublished doctoral thesis]. Copenhagen Business School.
- Port Economics, Management and Policy. (2024). *Revenue and expenses of average cruisers*. https://porteconomicsmanagement.org/pem-p/contents/part7_1/ports-and-cruise-shipping/
- PR Newswire. (2025). *Cruise Liner Group reports 2024 results and issues 2025 guidance*. <https://www.prnewswire.com/news-releases/royal-caribbean-group-2024-results-302361851.html>
- Cruise Liner Group. (2024). Annual report 2024. Cruise Liner Cruises Ltd.
- Cruise Liner Investor Relations. (2025). Press releases. <https://www.rclinvestor.com/press-releases/>
- Cruise Liner Press Center. (2024). Cruise Ship digital press kit. <https://www.royalcaribbeanpresscenter.com/icon-dpk/>

- RICS. (2024). RICS valuation - global standards 2024 (Red Book). *Royal Institution of Chartered Surveyors*.
<https://www.rics.org/profession-standards/rics-standards-and-guidance/sector-standards/valuation-standards/red-book/red-book-global>
- Rushmore, S., & Baum, E. (2001). *Hotels and motels: Valuations and market studies*. Appraisal Institute.
- Seatrade Cruise. (2025). *Cruise Liner outperforms on strong cruise demand, projects 40% EPS spike*.<https://www.seatrade-cruise.com/finance-legal-regulatory/royal-caribbean-outperforms>
- Travel Weekly. (2024). *Cruise Liner International Cruise Ship*.
<https://www.travelweekly.com/Cruise/Royal-Caribbean-International/Icon-of-the-Seas>
- U.S. Securities and Exchange Commission. (2022). Cruise Liner Cruises Ltd. - Form 10-Q.
<https://www.sec.gov/Archives/edgar/data/884887/000088488722000018/rcl-20220331.htm>
- Vogel, M., Papathanassis, A., & Wolber, B. (2012). The business and management of ocean cruises. CAB International.
- Wilkinson, P. (1999). Caribbean cruise tourism: Delusion? illusion? *Tourism Geographies*, 1(3), 261-282.
- Yahoo Finance. (2025). *Cruise Liner Group (RCL) - key statistics*.
<https://finance.yahoo.com/quote/RCL/key-statistics/>