A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics, titled:

A forced disrupt: "the next normal" for the cruise industry

A project carried out as part of the Master's in Finance and Management under supervision of: Professor José Miguel Pita.

Joana Rodrigues (student ID #41102)

Date: 4th of January 2021

Abstract

The aim of this chapter, "A forced disrupt: the next normal for the cruise industry" included in the Master's thesis Field Lab "A forced disrupt: the next normal for airlines and cruises" is to investigate how COVID-19 has impacted the cruise industry, by focusing on the business side. Thus, the main question set to investigate in this thesis is: *"How has COVID-19 impacted the cruise industry so far and what will "the next normal" look like for cruises?".* 14 March, 2020 determined the fate of the cruise industry for 2020: after several COVID-19 cases reported onboard many cruise ships, the industry completely shut down, as it had no strategic plans to deal with an infectious disease outbreak of this dimension. After five years of consistent and outstanding growth, companies were forced to completely suspend their operations worldwide, and the focus turned to redesigning the cruiser experience and implementing new health and safety protocols, in order to reduce the risk of a possible outbreak in a cruise. Given the novelty and unpredictibility of COVID-19, and the lack of data for the industry, research was particularly difficult, and based on good judgement.

To understand how the cruise industry will look like in "the next normal", a general overview of the industry is provided, and an analysis of the past 9 months was performed, particularly taking into account the impacts on the industry's key performance indicators and the actions taken by the biggest cruise operators to overcome this unprecedent challenge. In order to present accurate forecasts, the revenue management model of the industry is briefly explained, determined by price optimization and capacity allocation, leading to two distinct stages for the return of cruises: a first stage, focused in the return to operations – short-term – in which demand will be higher than supply, leading to an increase in prices; and a second and final stage, long-term focused, in which we expect a balance between supply and demand to be achieved, leading a price decrese in cruise ticket's prices.

Key Words: cruise industry, cruise operators, COVID-19, pandemic, KPI, revenues, costs, supply, demand, challenges

"This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-A-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209)"

Chapter 4:
The Cruise industry before, during and after COVID-19

Key Question

"How has COVID-19 impacted the cruise industry so far and what will "the next normal" look like for cruises?"

	Structure	Research questions	Methodology
4.1.	**Cruise industry before COVID-19**	**How has the cruise industry been performing before COVID-19?** ▪ Brief history of the quick expansion. How is the cruise industry structured? ▪ Who are the key players and why does it have such high barriers of entry? ▪ How have capacity measurement, primary profitability drivers and KPI's evolved in past five years?	▪ Market research ▪ Secondary data ▪ Cruise operators' annual reports 2015-2019
4.2.	**COVID-19's impact on the cruise industry**	**How has COVID-19 impacted the cruise industry up until this point?** ▪ How do KPI's for year ended 09/10, 2020 compare to the last five years? ▪ How where key drivers for KPI's been impacyed during full stop of operations? ▪ What actions have been taken to mitigate the financial burden and liquidity issues? ▪ Why are companies selling least efficient vessels, and to whom?	▪ Cruise operators' annual reports 2015-2019 ▪ Cruise operators' 2020 quartlerly reports
4.3.	**Cruise Industry in "the next normal"**	**How will the cruise industry look like "the next normal"?** ▪ When will demand bounce back? A look into 3 scenarios & revenue impact. ▪ What are the main factors impacting cruises' pricing structure? ▪ How does revenue management work in the industry? A balance between D&S and an insight into price optimization and capacity allocation.	▪ Benchmark analysis ▪ Demand rebound framework ▪ Specialized associations linked to cruise industry

Cruise industryderived from high levels of horizontal integration, that began in the 1990's, leading to few parent companies owning several brands

Modern cruise industry dates to the late 1960's, with founding of the following 3 largest companies we know today.

Carnival Corporation[101] — TM 9 — 105

1960's-1980's

1972: Carnival Corporation is founded
1989: Purchase of Holland America Line

1990's

1992: Purchase, 25% of Seabourn Cruise Line
1998: Acquistion 50% of Cunard Line
1997: Acquisition 50% of Costa Cruises
1999: Full ownership of Seabourn Cruise Line & Cunard Line

2000's

2000: Full ownership of Costa Cruises
2003: Combination of Carnival Corporation and P&O Princess Cruises

2010's-2020

Royal Caribbean Group[102] — TM 6 — 63

1960's-1980's

1968: Royal Caribbean International is founded

1990's

1997: RCI officialy becomes Royal Caribbean Cruises Ltd
1997: Celebrity Cruises merges with Royal Caribbean

2000's

2006: Purchase, Pullmantur Cruises
2007: Creation, TUI Cruises – joint venture with TUI AG
2007: Creation, Azamara as subsidiary of Celebrity Cruises

2010's-2020

2018: Purchase of 66% of Silversea Cruises
2020: Full ownership of Silversea Cruises

Norwegian Cruise Line Holdings (NCLH)[103] — TM 3 — 27

1960's-1980's

1966: Norwegian Caribbean Line is founded
1987: Changes name to Norwegian Cruise Line

1990's

2000's

2010's-2020

2014: Acquisition of Prestige Cruise International Inc., parent of Oceania Cruises & Regent Seven Seas Cruises

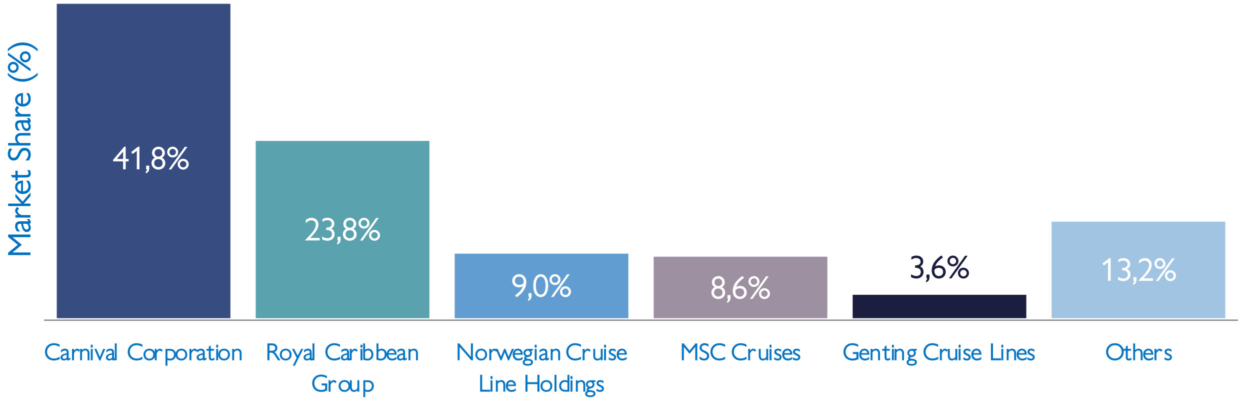
Biggest brands as of 2019

Sources:
Carnival Corporation; Royal Caribbean Group; Norwegian Cruise Line Holdings; Cruise Industry News

Cruises are part of an oligopolistic industry, as the four largest cruise operators account for 83.2% of the market as of 2019

Carnival Corporation makes up almost half of the cruise industry

Global market share (%)[104]



Porter's Five Forces emphasizes buyer power and entry barriers[105]

Power of Buyers
- Travel agencies book 2/3 of cruises: decreasing trend
- Low price sensitivity
- TV/Internet/Media

Industry Rivalry
- High concentration ratio
- High entry and exit barriers
- High industry growth rate

Power of Suppliers
- High for fuel and ship suppliers
- Low for food & other suppliers

Threat of New Entrants
- High barriers to entry
- Economies of scale
- Government policy
- Brand

Threat of Substitutes
- Distinctiveness of cruises
- Many indirect competitors

A glance into a consolidated industry:

- Four companies – Carnival Corporation, Royal Caribbean Group, Norwegian Cruise Line and MSC Cruises – own 83.2% of the global cruise supply, by owning several brands.
- The three biggest companies are publicly traded companies, whilst MSC Cruises remains a private one.

High entry barriers can be explained as follows[106]

Capital requirements	▪ Capital-intensive nature discourages new entrants. ▪ Amount estimated to start a cruise line is USD 1bn.
Economies of scale	▪ Economies of density: "mega-ships", lower unit costs, lower prices. ▪ Economies of fleet size: fixed costs that require substantial capital (design, research, construction) are spread over many ships.
Brand awareness	▪ As the cruise industry operates on a "loyalty basis", brand awareness highly influences consumers' trust.
Shipyard slots	▪ Similarly to the cruise ship industry, the cruise shipbuilding industry is also an oligopoly, with the 3 biggest shipyards located in Europe.
Sales and marketing scale	▪ Travel agents sell approximately 70% of passenger tickets for cruises, being important to effectively manage commissions' costs.

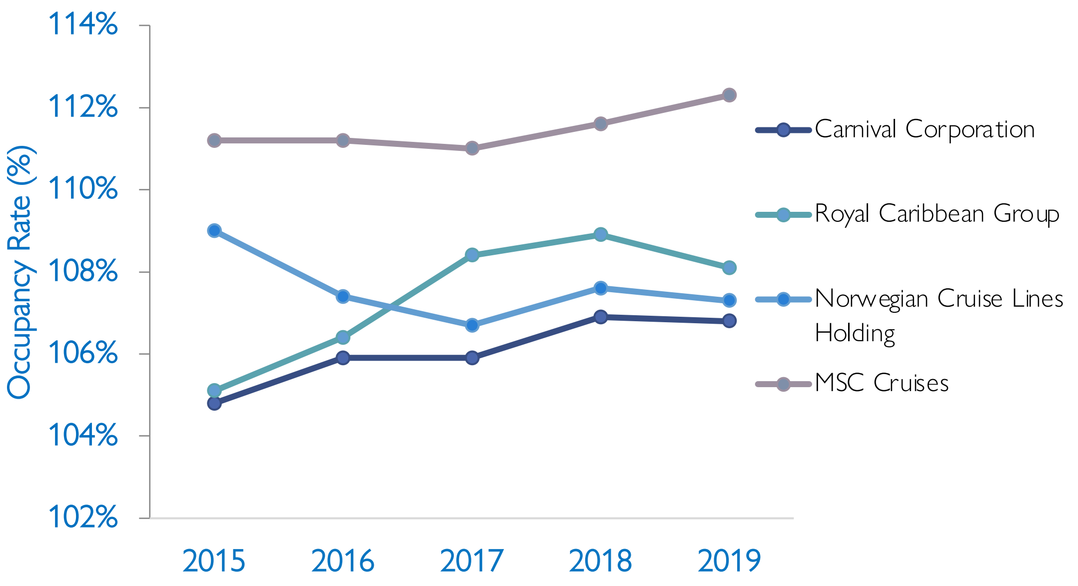
Sources:
Cruise Industry News; Cruise Market Watch; Medium

Dynamic growth in the cruise industry in the last 5 years: higher capacity levels are directly related to increased demand

In 2009, RCC launched MS Oasis, the largest ship ever built at the time, raising competitions level to an all time high, completely changing the industry dynamics.

Occupancy rates consistently higher than 100%

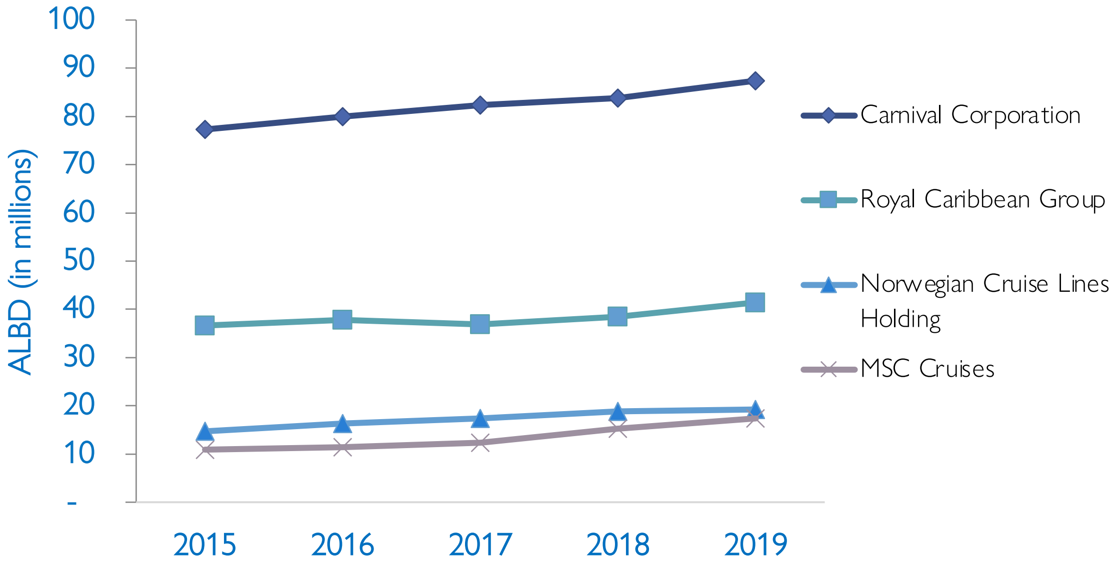
Occupancy rates for 4 biggest cruise operators, 2015-2019[107-110]



- Carnival is by far the company which can sail with highest occupancy rate, consistently higher than 100%.
- All companies have sailed with occupancy rates higher than 104% in the last 5 years, highly important to achieve higher onboard revenues.

Increased demand is directly linked to higher capacity:

Available lower berth day for 4 biggest cruise operators, 2015-2019[107-110]



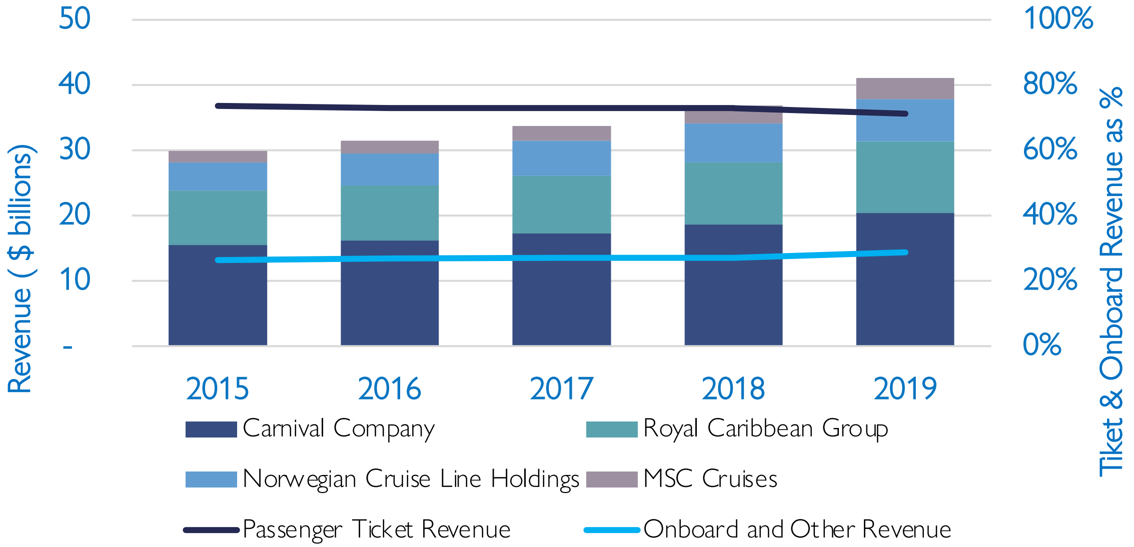
- Supremacy of Carnival Corporation in passenger capacity, having somewhat the double of the passenger capacity of RCC.
- Despite being founded 20 years later, MSC Cruises is the world's fastest-growing cruise line, having very similar numbers regarding capacity measurement to Norwegian Cruise Line Holdings.

As revenues continued to rise on a yearly basis over the last 5 years, costs tend to follow the trend, although margins being quasi-fixed in the industry

When it comes to revenues, passenger ticket value accounts for most of the revenue, nearly 70%, with commissions, transportation & other, and other ship operating & tours having the highest impact on costs.

In just 5 years, revenues have increased by 37%...

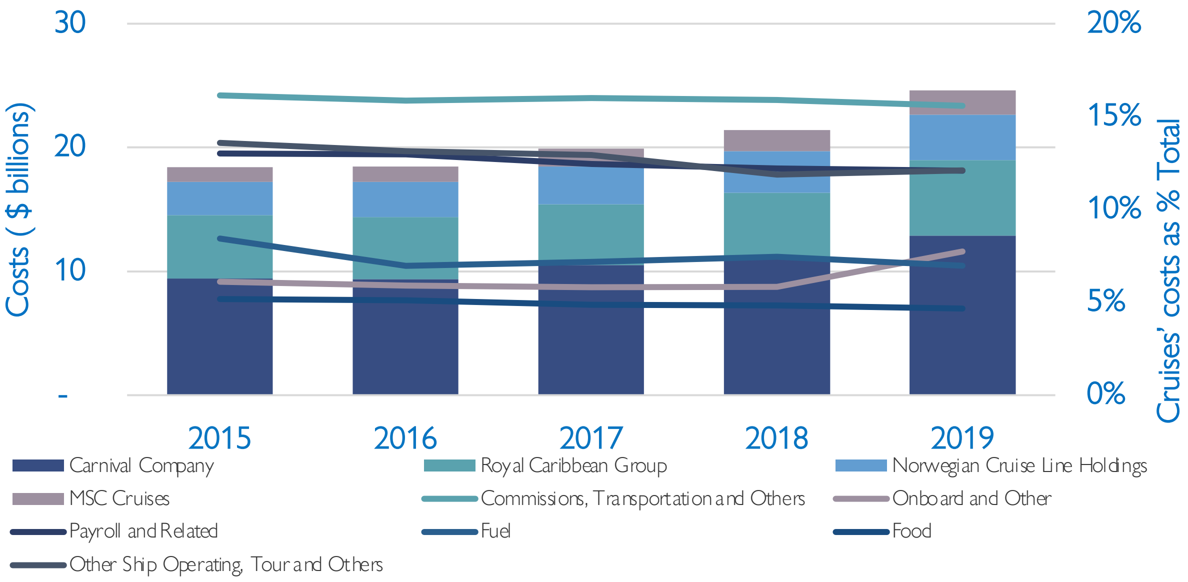
Revenue drivers for 4 biggest cruise operators, 2015-2019[107-110]



- Carnival Corporation, due to its size, is the company with highest reported revenue, achieving revenues of USD 20bn in 2019.
- Passenger ticket and onboard have maintained a constant weight in the total, despite a strong trend in the growing importance of onboard revenue.
- Overall, for 2019, total revenue for the four biggest cruise operators surpassed USD 40bn.

… costs followed the same trend, growing 34% in 5 years

Cost drivers for 4 biggest cruise operators, 2015-2019[107-110]



- Cruises' costs have been increasing, however, at a slower pace than revenues, due to economies of scale, as larger vessels are more cost efficient to operate.
- The most significant costs are commissions, transportation & other (~16%), other ship operating and tours (~13%) and payroll and related expenses (~12%).
- For 2019, total cost for the four biggest cruise operators was circa of USD 25bn.

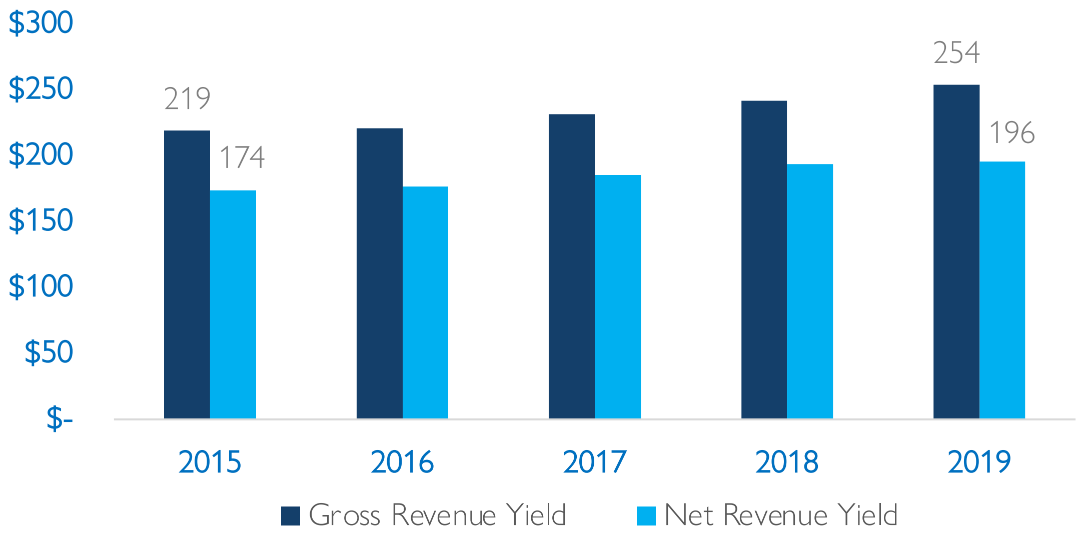
Sources:
Carnival Corporation; Royal Caribbean Group;
Norwegian Cruise Line Holdings; MSC Cruises;

In 2019, the cruise industry's net yields were at their peak, powered by increased demand and capacity available on ships

When looking back 5 years, revenue yields have increased in an expressive manner, highlighting the power of economies of scale, evidenced by a slow increase in costs per available lower berth day.

Net and gross revenue yield have been increasing

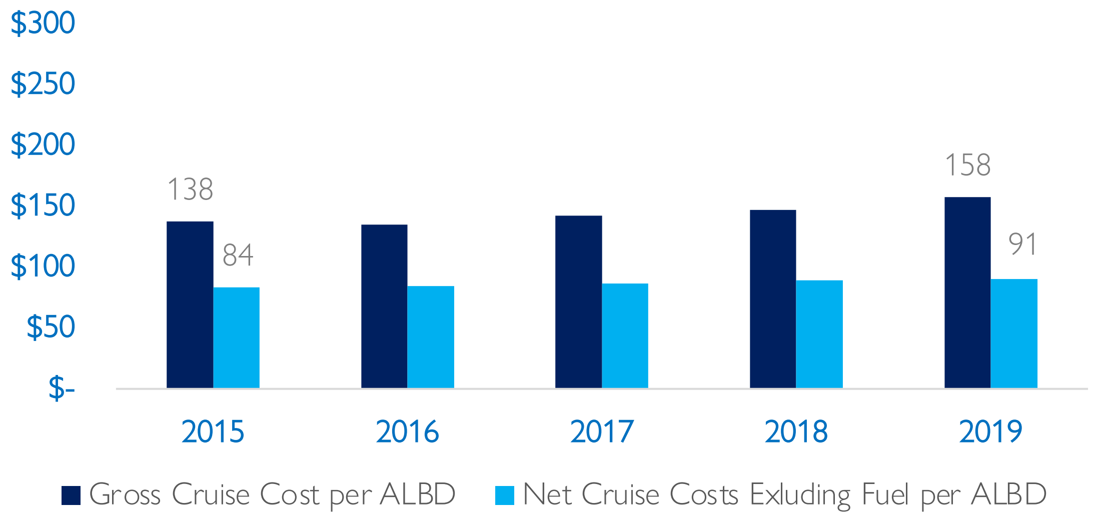
KPI's cruise industry – revenues, 2015-2019[107-110]



Both Gross and Net Revenue Yield increased more than 10% on the last 5 years, considering a weighted average for the biggest four cruise operators.

Gross and net cruise cost excluding fuel per ALBD have been increasing at a lower rate than revenue KPI's

KPI's cruise industry – expenses, 2015-2019[107-110]



Both metrics show a slow increase for the last 5 years, being noticeable the importance of Net Cruise Costs Excluding Fuel per ALBD, due to volatility of oil cruise prices.

Note regarding calculation method: KPI's for the cruise industry were based on the weighted average of the four biggest cruise companies' KPI's for the period 2015-2019.

Sources:
Carnival Corporation; Royal Caribbean Group;
Norwegian Cruise Line Holdings; MSC Cruises;

Cruise KPI's are a balance between capacity and financial drivers, therefore making it hard to capture the real financial impact of the pandemic. However…

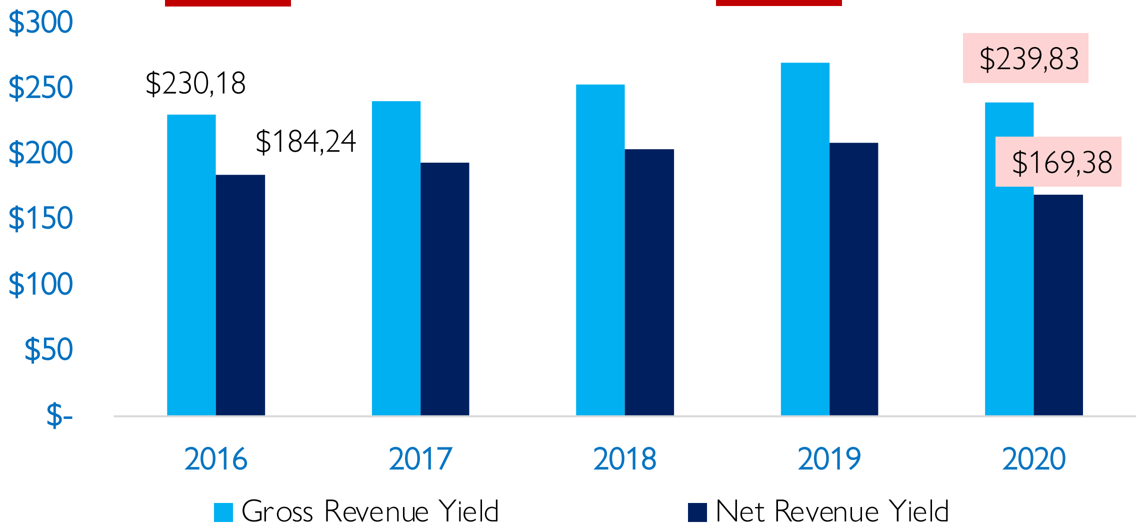
By analyzing KPI's for the first 9 months of the year, the impacts of COVID-19 in the industry are devastating, especially for cost related KPI's, with Gross Cost per ALBD and Net Cruise Costs Excluding Fuel per ALBD growing, respectively, 103% and 212%.

Slight decrease in revenue KPI's…

KPI's year ended on Q3 2016-2020 - revenues[111,112,113]

% Change in Gross Revenue Yield: -11%

% Change in Net Revenue Yield: -19%



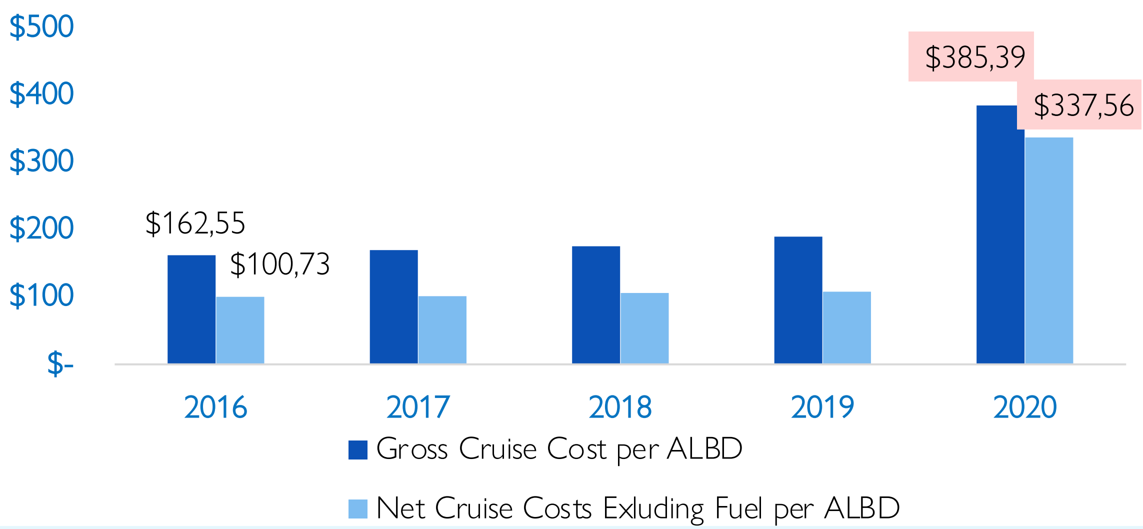
…which does not completely reflect the desvastanting impacts of COVID-19 in the cruise industry, as both ALBD and revenues decreased in the same proportion.

2020 was marked by a steep increase in costs

KPI's year ended on Q3 2016-2020 - expenses[111,112,113]

% Change in Gross Cruise Cost per ALBD: +103%

% Change in Net Cruise Costs Exluding Fuel per ALBD: +212%



The increased costs were mainly crew-related as salaries, food and repatriation expenses, fuel and ongoing costs related to the pandemic, e.g. insurance and fleet maintainance.

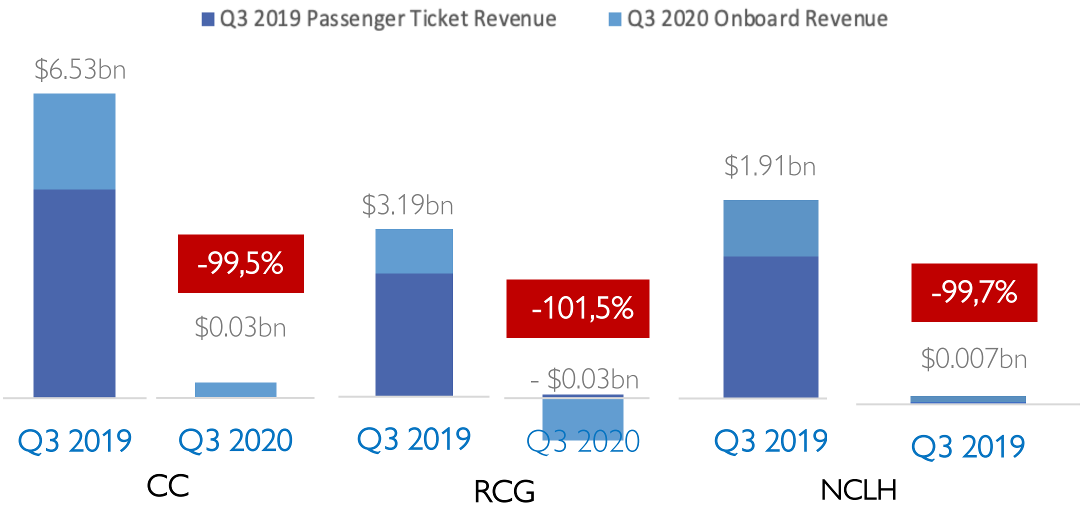
Note regarding calculation method: KPI's for the cruise industry were based on the weighted average of the four biggest cruise companies' KPI's for the period 2015-2019.

Sources:
Carnival Corporation; Royal Caribbean Group; Norwegian Cruise Line Holdings; MSC Cruises;

… By looking closer into capacity measures and revenue drivers, the impact is highly devastating

Cruise industry is sailing in rough waters, as revenues alongside passengers, have evaporated

Revenue for 3 biggest cruise operators, 3Q19 vs 3Q20[111,112,113]



ALBD simply evanished due to full stop of operations

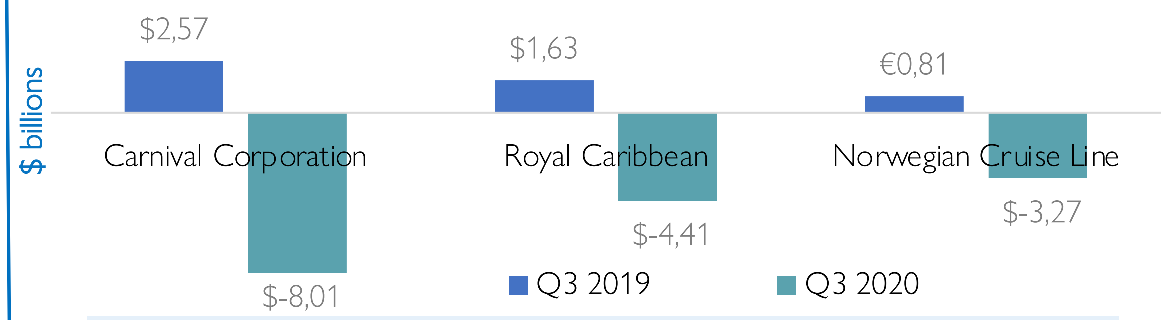
Excluding the first trial of restart of operations during the summer, ALBD was null for the 9 months ended Aug 31/ Sep 30.

Revenues? Not this year…

- Cruise lines' revenue has practically evaporated in Q3 2020, diminishing around 100% compared to homologous result.
- Royal Caribbean reported rare negative Onboard Revenues, due to previously incorrectly recognized credits and refunds, illustrating the devastating effect of operations' suspension.

Implications in bottom line result

Net income for 3 biggest cruise operators reported 9m ended Aug. 31, 2020 (CC) & Sep. 30, 2020 (RC, NCL)[111,112,113]



Bottom line results are highly disappointing, with cruise operators expecting to report a net loss at year end

- All major cruise operators reported a net loss in the given period.
- The net loss could have been worse, mitigated by the limited resumption of cruises:
  - In Italy and Germany during Q3 2020, by AIDA Cruises and Costa Cruises, respectively, the Italian-based and German-based subsidiaries of Carnival Corporation, and MSC Cruises, with itineraries restricted to domestic passengers.
  - Despite successfully completing numerous trips, companies were forced to cancel cruises for the 2020 holiday season, due to the worsening of COVID-19 rate infections late in the year in these countries and the restrictions implemented on people's mobility by governments.

Sources:
Carnival Corporation; Royal Caribbean Group; Norwegian Cruise Line Holdings; MSC Cruises;

The industry is facing an unprecedent challenge in developing measures to improve liquidity and instilling confidence in cruisers…

NOVA SCHOOL OF BUSINESS & ECONOMICS

Despite their effort in turning to capital markets and negotiating with governments, cruise lines have so far only been able to secure liquidity (assuming zero-revenue) for a period between 9-12 months. The industry has taken the following measures so far:

Retaining Customers[114,115,116]

To keep future business intact, operators are offering Future Cruise Credits (FCC) between 110-125% of booking:

- This is an advantageous alterantive to cash refunds for operators as it allows flexibility for future bookings and provides liquidity needed during the stop of operations.

Operators are also offering Onboard Credits:

- Operators are giving passengers a chance of have extra credit to spend on drinks, excursions, etc., on their already booked sailings, conditional on not cancelling them.

Innovating Operations[120,121]

- Capital expenditure reductions, including reduction of sales and administrative projects.
- In order to significantly reduce payroll & related expenses reduction, companies announced a combination of layoffs, furloughs, reduced work weeks and salary reductions, including senior management.
- Sale of least efficient ships, despite the fact that cruise lines have considerably diminished their bargaining power over how much they can expect for scrapped vessels and no predicted new orders soon.

Implementing Health Protocols & Changing Cruise Experience[117,118,119]

Implementation of core health procedures recommended by CDC, included in the "Framework for Conditional Sailing Order for Cruise Ships":

- Mandatory testing for all passengers and crew, at regular intervals and when enyone embarks or disembarks the ship;
- Mandatory mask wearing when as long as physical distancing cannot be maintained;
- Increase of medical staff, development of response plans and improved air ventilation and management systems;

Discussion of possible changes on cruise experience, namely:

- Abolishment of traditional buffets and self-service areas;
- Disembarkation terms of creating a "bubble" – shore excursions;

In December 2020, U.S. Congress passed new regulations for the cruise industry: the Cruise Passenger Protection Act requires a trained phsician to be onboard and cruise lines must install video cameras in all public spaces.

Financial Aid[122,123,124]

- Agreements with respect to financial covenants, as waive compliance for all funded export credit facilities through March 31, 2021 and for certain bank loans, through respective maturity dates.
- Cruise companies were left out of the CARES Act stimulus, being denied federal assistance from U.S. Congress in April, and again in December, whislt airlines will get additional payroll support from a new stimulus package.
- Companies are getting financial aid from other governments, for example, the United Kingdom, which has assisted cruise lines as part of a program known as the Covid Corporate Financing Facility:
  - Carnival received £25m;
  - Royal Caribbean received £300m.
- In December 2020, Royal Caribbean launched a $40m loan program to support travel advisors, as travel agencies have also struggled financially during the pandemic.

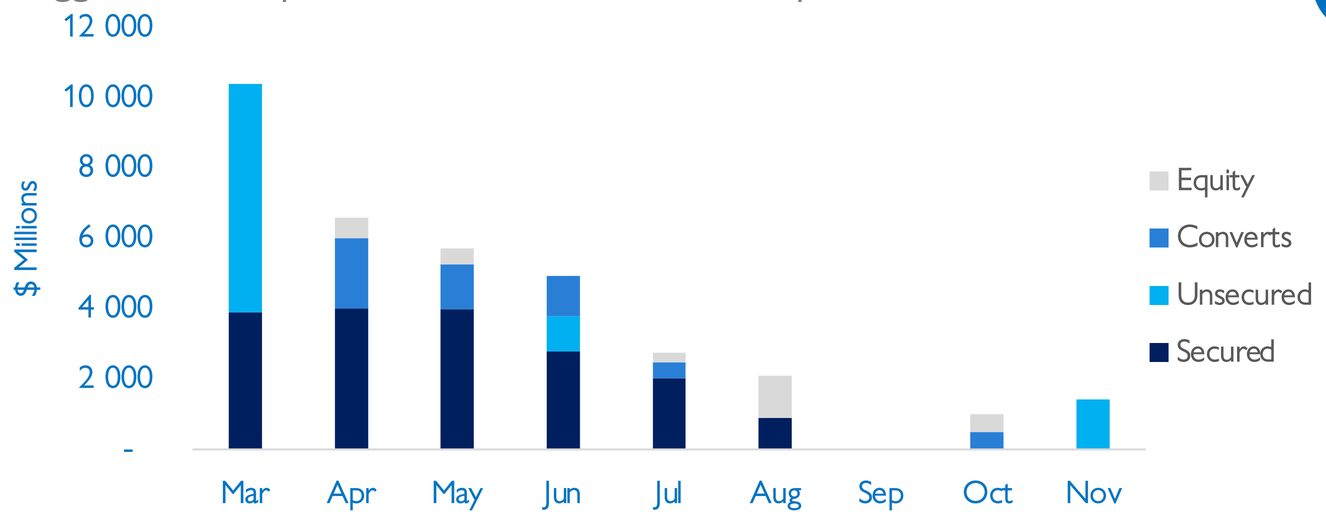
Sources:
Cruise Radio; RCG; NCLH; CDC; Travel Pulse; Cruise Industry News; U.S. Skift; Royal Caribbean Blog

…By raising capital through a combination of debt, equity and convertible notes

Cruise operators have raised an impressive amount of capital in the past months, to stay above water and instill investors confidence.

Billions to weather the crisis

3 biggest cruise operators' COVID-19 related capital raised[125]



- On October 2020, CDC lifted the cruise ship "No Sail Order", replacing it with a Conditional Sail Order, however elevating cruising warning to very high. With cruising forecasted to pick up on 3Q21, cruise operators have face minimal liquidity headroom, having an estimated 10 to 17 months of available cash.
- Whilst bigger companies have easier access to sources of financing and have been able to secure enough liquidity to withstand a full stop in operations, small cruise operators do not benefit from the same creditability. As seen in 2020, if a delay is longer than expected to restart operations, we can predict further cruise operators to exit the industry.

… Leading to a more consolidated industry

So far, two small cruise companies could not resist the impacts of global suspended operations:

Pullmantur Cruceros' bankruptcy[126,127]

- On June 11, 2020, Royal Caribbean announced it was going to move the three Pullmantur's fleet ships into a cold lay-up, in order to trim maintenance costs for an extended period, a sign of the beginning of the end for the company founded in 1971.
- Just a few days later, in June 22, 2020, Pullmantur Cruceros filled for reorganization under the Spanish insolvency laws. Guests with booked sales for Pullmantur will be offered the option to sail in other Royal Caribbean's brand ships.

Cruise & Maritime Voyages' bankruptcy[128,129]

- In July 2020, the U.K. based cruise line shut down after days of trying to find emergency funding. Passenger who had already reserved voyages can claim a compensation with U.K.'s ABTA, a travel trade association that ensures trips sold to companies in case of default.
- The operator was known for buying older ships from Carnival Corporation's brands and was expected to receive two of the 18 ships CC is expected to sell in the following months.

Sources:
Fitch Ratings; USA Today Travel; Cruise Industry News; The Maritime Executive; Cruise Mapper

Big players are selling ships to the "underdogs", a reflection that older ships are not surviving the COVID-19 suspension of operations

NOVA SCHOOL OF BUSINESS & ECONOMICS

As new giant ship deliveries are expected, although delayed due to the COVID-19 outbreak, big players in the industry now face the tough decision to either sell non-core assets to smaller cruise lines or send them to be scrapped.

How many ships have been or are expected to be sold during the pandemic?[130,139]

26 ships

Who are the sellers?

1. Carnival Corporation distances ifself from its direct competitors: the company has been active in trying to find buyers for their older and smallest ships, having already sold 18 ships from 6 different brands.[133,134,135]
2. Royal Caribbean lost Pullmantur's fleet due to bankruptcy and announced the sell of its two oldest vessels.[131,137,138]
3. Smaller companies, as Fred Olsen Cruise Lines have seen this an an opportunity to get rid of their smaller vessels and to purchase, at a lower price than usual, vessels from bigger cruise lines: the company recently purchased 2 ships from Holand America Line (CC).[142,143,144]

Who are the buyers?

1. Business is booming for scrap yards, as at least 3 CC's ships and Pullmantur fleer are being dismantled in a Turkish scrap yard.[132,136,140,141]
2. Smaller Asian undisclosed buyers and ferry companies have also been active in purchasing smaller vessels.
3. As mentioned before, smallest operators are renovating their fleets through a trade-off between oldest vessels and buying bigger player's ships.

Why are cruise operators selling least efficient ships?

The "sharks" of the industry, especially those who had older fleets as Carnival Corporatiom, were already selling a few ships per year before the COVID-29 pandemic hit the industry. Why?

1. Powered by changing consumer expectations
2. Changing demographics of cruise passengers
3. New and more efficient ships are expected to be delivered in the coming years

Allowing to:

- Generate new passenger demand
- Minimize cost units and environmental costs

Why did COVID-19 accelerate these sales?

Most of the ships were not supposed to have such an early departure, however, selling these ships is an efficient way to:

1. Reduce maintainance costs associates with hot/cold lay-up scenarios
   - Hot lay-up scenario: Ships are kept pratically ready to go back into operation. Approximate cost is USD 5m per month, per ship
   - Cold lay-up scenario: Enables operators to trim ship's maintenance costs per an extended period. Approximate cost is USD 3m per month, per ship.

&

2. Increase liquidity

Good strategy to increase liquidity, despite non-core assets being sold at a discount

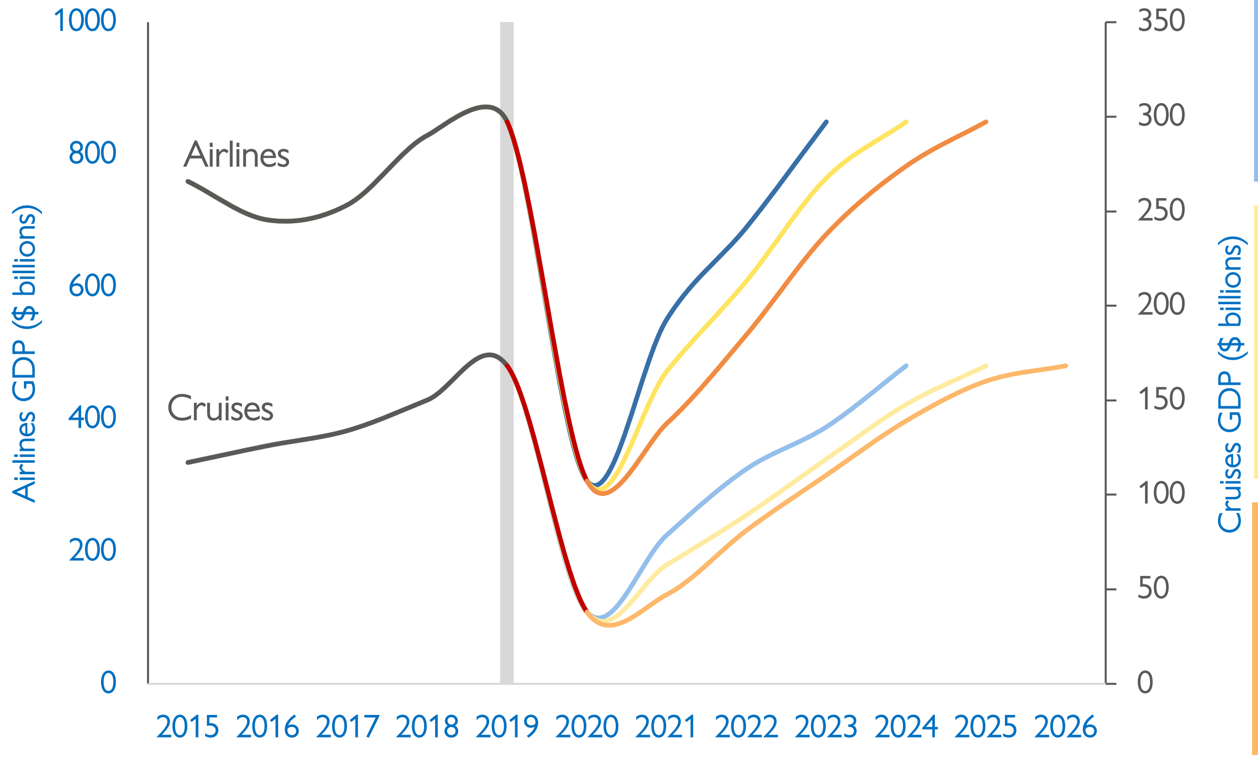
Sources:
FT Cruise Hive; The Maritime Executive; Business Insider; Cruise Critic; The Washington Post; Traveller

The airline industry will most likely recover faster than the cruise industry, yet each with a two-year difference around scenario uncertainty

In order to forecast the contribution of cruises & airlines to World GDP, we based our projections for World GDP on regional virus recurrence, with slow long-term growth, and assuming World GDP returning to pre-crisis levels only in 2023.

3 scenarios may play out in the future

Contribution of Cruises & Airlines to World GDP Projection[146-152]



Cruises[145]

Coronavirus Base Case

- No cruise activity in Q1 2021.
- Test sailings completed successfully in the beginning of the year.
- Modest return for 2021.
- Cruise revenues reach 2019 levels by **2024**, in best case scenario.

Coronavirus Downside Case

- No cruise activity for the first half of 2021.
- First half of 2021 dedicated to conducting a series of test sailings in order to validate new health protocols.
- Recovery only in **2025**.

Coronavirus Severe Downside Case

- No cruise acitvity for the first half of 2021.
- Assumes a slower recovery based on possible failure of test sailings and/or demand lower than expected.
- Recovery by **2026**.

Airlines

Early Vaccine Base Case

- Strong recovery in 2021 especially for domestic and international flights, with available vaccine at scale in 2021

Expected recovery: 2023

Coronavirus Base Case

- Strong recovery in 2022, with vaccine not available at scale in 2021, but with a successful virus containment

Expected recovery: 2024

Coronavirus Stress Case

- Latest recovery with unsuccessful virus containment and ineffective vaccine

Expected recovery: 2025

Sources:
Fitch Ratings; Mckinsey & Company; Cruise Lines International Association; International Monetary Fund

In the most reasonable case scenario, revenues are not expected to return to 2019-levels until 2025 – however 2024 in the best scenario

Given the high uncertainty about the expected restart of operations and no consensus regarding demand, which impacts previously analyzsed KPI's, Revenues, due to its simplicity, allows us to have a simpler overview of what the future holds:

A reminder: Cruise's recovery scenarios[145]

Coronavirus Base Case

- No cruise activity in Q1 2021.
- Modest return for 2021.
- Recovery by **2024**, in best case scenario.

Coronavirus Downside Case

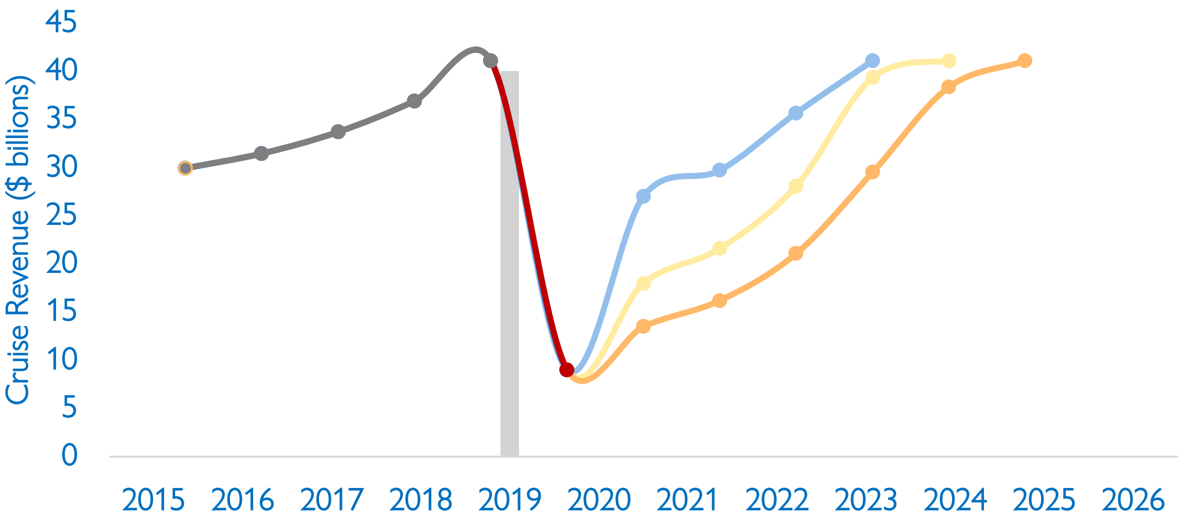
- No cruise activity for the first half of 2021.
- Recovery only in **2025**.

Coronavirus Severe Downside Case

- No cruise acitvity for the first half of 2021.
- Assumes a slower recovery.
- Recovery by **2025**.

Implications for the industry's revenues

Cruise industry revenue forecast 2021-2026[146-152]



Return to "business as usual" forecasted for 2024

- The industry's revenues are expected to reach rock bottom in 2020.
- Companies are set to start recovering in 2021, despite the uncertainty of the beginning of operations, with analysis pointing out to a return near the end of the 1st quarter - March/April.[153]
- It will take approximately 5 to 6 years to return to 2019's revenue levels.

How can a vaccine impact the scenarios?[154]

- With three possible effective vaccines on the table - from Astrazeneca, Pfizer and Moderna -, it makes sense to ask if cruises are waiting for the vaccine to become widely available in their most important destinations, as recently, major cruise lines postponed their restart for March/April 2021.
- The truth is, the vaccine might not be the answer that cruises are looking for, but it is clear that in the long-term, it could become a mandatory requirement for cruising, as confirmed by Frank del Rio, chairman of NCLH.

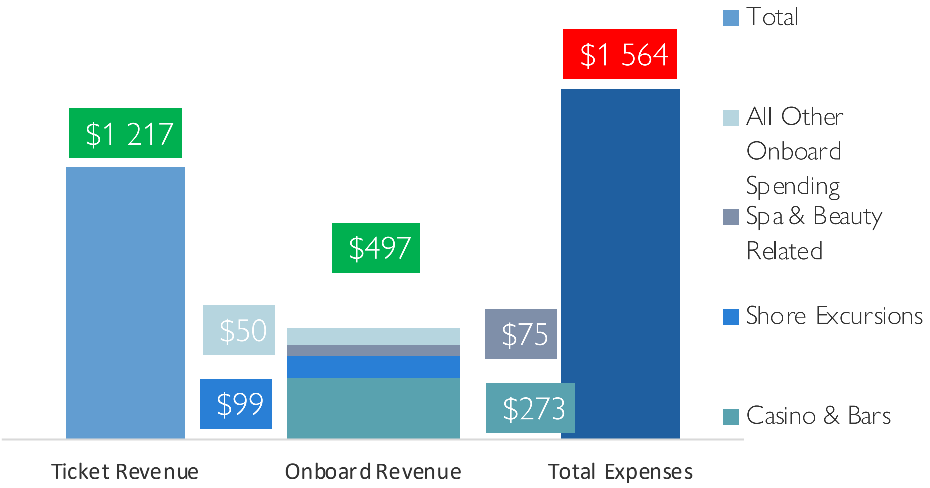
As many factors remain unknown, cruise lines should not plan or decide to restart operations only when a vaccine is widely available.

Sources:
Fitch Ratings; Mckinsey & Company; CLIA; International Monetary Fund; Travel Wind News; Travel Pulse

Before COVID-19, onboard revenue was already a priority area for cruise operators. Why is it increasingly important for the future outlook?

Ticket revenue is not enough to cover total expenses

Average cruise revenue and expense, per passenger[155]



As the industry is predicted to start sailing with trial cruises to "nowhere", ships will be considered the destination itself, being important to take advantage of onboard consumption, given ticket revenue's unpredictability forecasted in the short-medium term.

- Companies will be battling to attract customers based on the services and activities provided onboard, with most of them regarding onboard revenue.

… Leading to a continuous focus on onboard revenue

Implications for the restart of operations

Positive trends into the future[156,157]

1. **Shore Excursions**
   Cruise operators have designed a "social bubble", by allowing passengers to only leave ships in monotired shore excursions.
2. **"Cruises to nowhere"**
   A trend that began during the Summer, particularly in the Asian region with cruise ships departing from Singapore and returning to the same port on a 4-day cruise without stops.
3. **Private Islands**
   Powerful advantage for cruise restart in the United States' market, given that since 2016, "cruises to nowhere have been prohibited in US with short-length Caribbean cruises – all consumption related profit goes to the company.
4. **Broad range of onboard activities**
   Due to increased time spent onboard, guests time is fully dedicated on taking advantage of all facilities and services provided onboard ships.

Negative trends into the future[156]

1. **Social Distance**
   Social distance might negatively impact onboard revenue, to the extent that guests might prefer more privacy, instead of hanging all night at bars, where table service will only be allowed.
2. **Facilities closed or with limited capacity, as:**
   Nightclubs, casinos, theaters, spas, swimming pools, etc.
3. **Some services provided onboard will most likely disappear:**
   Photography sales

Sources:
Cruise Market Watch; National Geographic; Travel Weekly;

The most important factors impacting pricing structure are those concerning ship's characteristics, that will ultimately add value to the customer

Facilities available onboard — Diverisification of facilities offered is a top priority:

Cruise lines have focused on enhancing onboard services, turning ships into the destination itself.

- Increased days at sea expected, an opportunity to increase margins on onboard revenue, given that due to capacity contraints, operators will be sailing with its biggest ships, allowing for higher ticket prices and better onboard spending.
- Private operator's islands are another way to generate income, as they offer controlled settings.[158,162,163]
- Opportunity to diversify the traditional night live entertainment, as some of the cruises that have already sailed cancelled night shows.

Number of nights of the itinerary — Number of nights are expected to decrease:[161]

Cruises can range from 2 to 21+ nights, depending on the destination. The most common being the 7-night cruises.

- Length of cruise is directly linked to cruiser's age: older cruisers belonging to "high risk groups" are seen as more susceptible to COVID-19, and this cruiser segment are big fans of longer voyages.
- Cruise lines will continue to focus in attracting younger generations, which prefer shorter trips.
- The U.S. Centers for Disease Control and Prevention, "CDC", has demanded that initial itineraries should not be longer than seven days.[165]

Ship class & accomodation type — Demand for better accomodation to increase:

Cabin types offered can differ based on size, location in the ship and internal amenities. Price differentials are relatively small ($1/2-$15/20 a day per person).

- Family-oriented packages.
- Desire for increased comfort due to more time spent aboard: customers are willing to pay more for bigger stateroom space and balconies offering fresh air.
- Recently, Holland America Lines, a brand owned by Carnival Corporation, confirmed that there has been a surge in booking for suites. This is related with the fact that those who did not get the chance to go on vacation this year, are looking to spend more on future vacations.[166]
- In a study performed by Cruise Critic in December 2020, cruisers are spending more when booking cruises, compared to the homologous period.[167]
- New cruises are looking for specialized and customizable experiences, easier to offer in fleet's most recent ships, as they offer a greater diversifty of restaurants, bars, entertainment and activities available.

Port content vs sea days — Port content will diminish.

Younger generations are eager to see and discover new destinations, while traditionalists prefer to relax

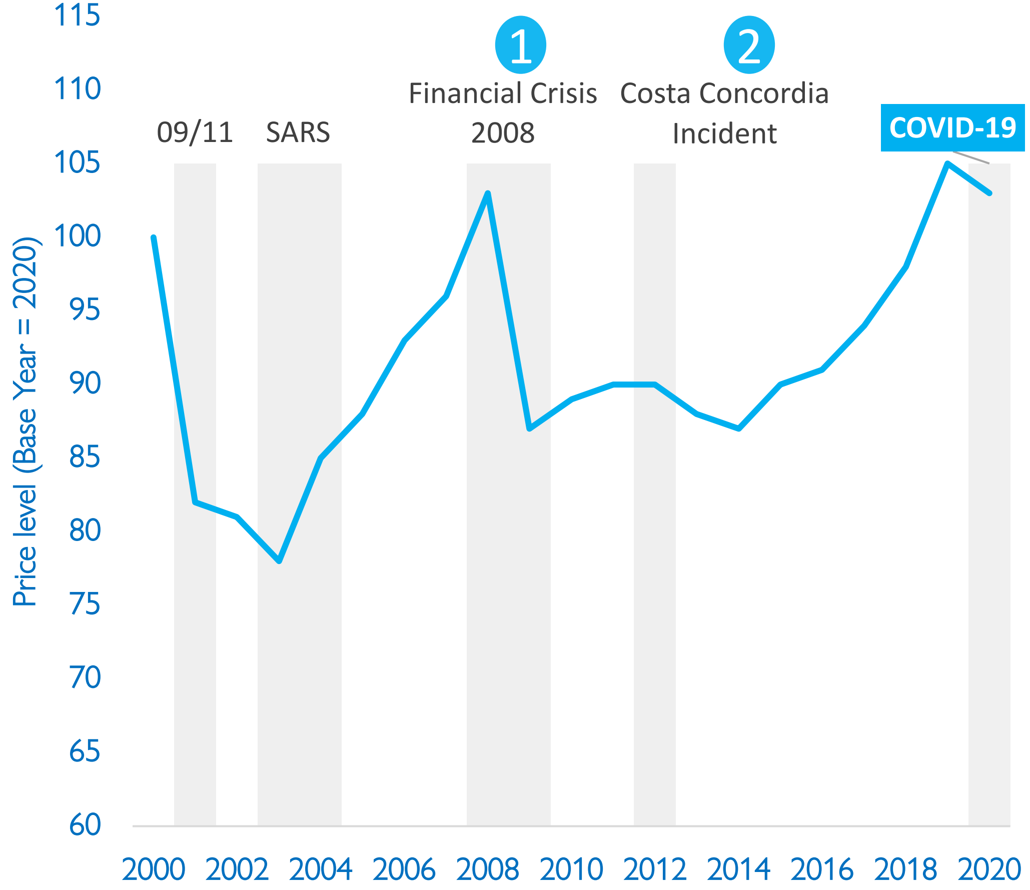
- Continuous restrictions regarding the opening of economies to cruises, because if COVID-19 cases are out of control in a country, governments can decide to implement a national lockdown, limiting border crossing – MSC and Costa were forced to reroot Mediterranean itineraries when Greece went back into lockdown on November 5, 2020.[159]
- So far, the cruise industry has successfully completed 30 voyages carrying more than 4,000 guests without COVID-19 cases being reported onboard, by: creating a social bubble and "cruises to nowhere".[160,164]
- Some cities around the world want to create limits to the number and size of ships, motivated by "overtourism" and negative environmental impacts.
- As ships continue to get longer and sit deeper in the water, inherent limitations to ports are inevitable, leading to an increase of off-limit ports.

Sources:
Travel Weekly; Ship Technology; NYT; CBC; USA Today Travel; The Wall Street Journal; Forbes

Cruises are one of the sectors with the most sophisticated revenue management strategies[71], primarily focusing on Price Optimization (supply focused) and…

Cruises: a crisis-prone industry

World events' impact in the cruise industry price level, 2000-2020



Looking into the future by remembering the past…

- Cruise companies try to avoid extreme price changes, as this could result in the dilution of bookings and could scare potential cruisers.
- Averaging this century's price moves, after critical economic events, prices fall by 6.3% & average time of recovery is 3 and half years.

A glance into the most recent events:

1 **Financial Crisis 2008:** After the 2008 financial crisis, the industry took 3 years to recover.

2 **Costa Concordia Incident, 2012:** Slowdown in demand, mostly offset by pricing reductions and active marketing activity, as in May, Costa bookings were higher than forecasted and higher than they were a year ago.[172,173]

Coronarivus is not just one crisis, but several: health emergency, an economic disaster and reputation nightmare

Key difference to previous crisis: smaller cruise fleet at the time, allowing price reductions, as demand was significantly higher.

- Industry insiders are optimistic about the industry's size and resilience to previous crisis, despite the very different current supply/demand balance.
- Carnival Corporation's CEO has stated that "there will plenty of room for prices to go up, not down", as confirmed by the numbers: average cost of a cruise has increased 120%.[170]
- Prices are most likely to be higher as new sanitary measures like surface cleaning, implementation of air filtration systems and touchless technology come at a high cost for cruise lines.[168,169]
- Besides that, cruises will have to deal with the costs to defend against lawsuits filed by passengers who were stuck on delayed/quarantined ships in March/April.

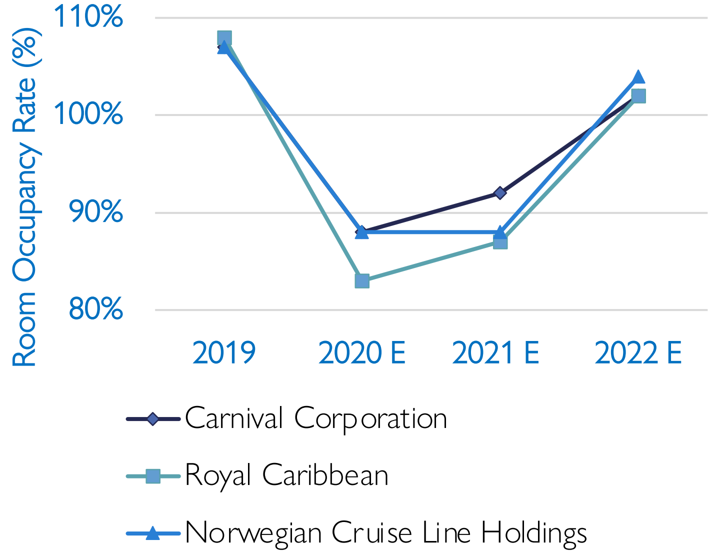
Sources:
Los Angeles Times; Travel Weekly; Cruise Industry News; Journal of Travel Research; PR Weekly

…Capacity Allocation, which can be focused on demand…

No general consensus regarding demand outlook is perceived: cruise operators and industry experts suggest that there will be, indeed, a high desire for cruising when ships start to sail, whilst some consumer behaviour surveys suggest otherwise.

At which capacity level ships have to sail in order to be profitable?[175]

Room occupancy rate forecasts 2020-2022[174]



- To be profitable, cruise ships have to sail with occupancy rates higher than 95%.
- For a considerable period of time, when restarting operations, cruises are expected to sail at much lower rates:

Demand forecasts do not generate consensus...

1 **Cruise operator's bookings updated on Q3 2020 highlight the long-term potential demand for cruising:** cumulative advanced bookings for the second half of 2021 are the higher end of the historical range.

2 **65% of 2021's bookings are new**, with the remaining due to redemption of FCC – that says a lot about demand expectations.

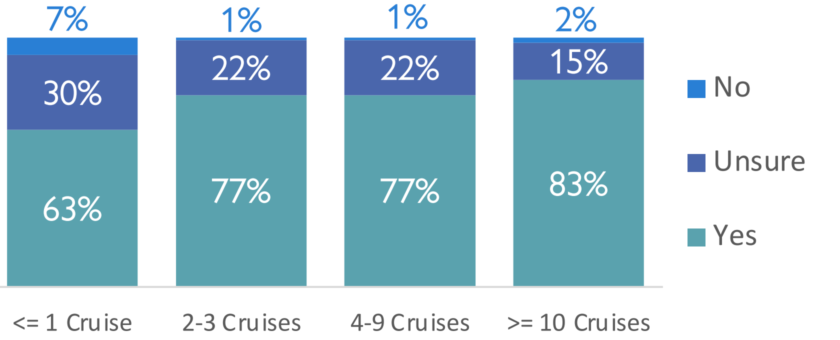
Passengers requesting cash refunds (%)[176]

Carnival Corporation	Royal Caribbean	Norwegian Cruise Line
55	50	60

3 **An updated survey by Cruise Critic on December 2020,** showed that:[167]

- **35%** of respondents are already searching to book a future cruise **(+7% than April).**
- Experienced cruise, those who have cruised 10 or more times, are 20% more likely to choose this type of vacation, than those who have taken none or one cruise.

Will you book a future cruise? (based on cruiser experience)



4 **Thesis survey:** The majority of respondents of the survey perfomed by our team, assured that, given the chance, wouldn't go on cruise in the following 6 months (59%).

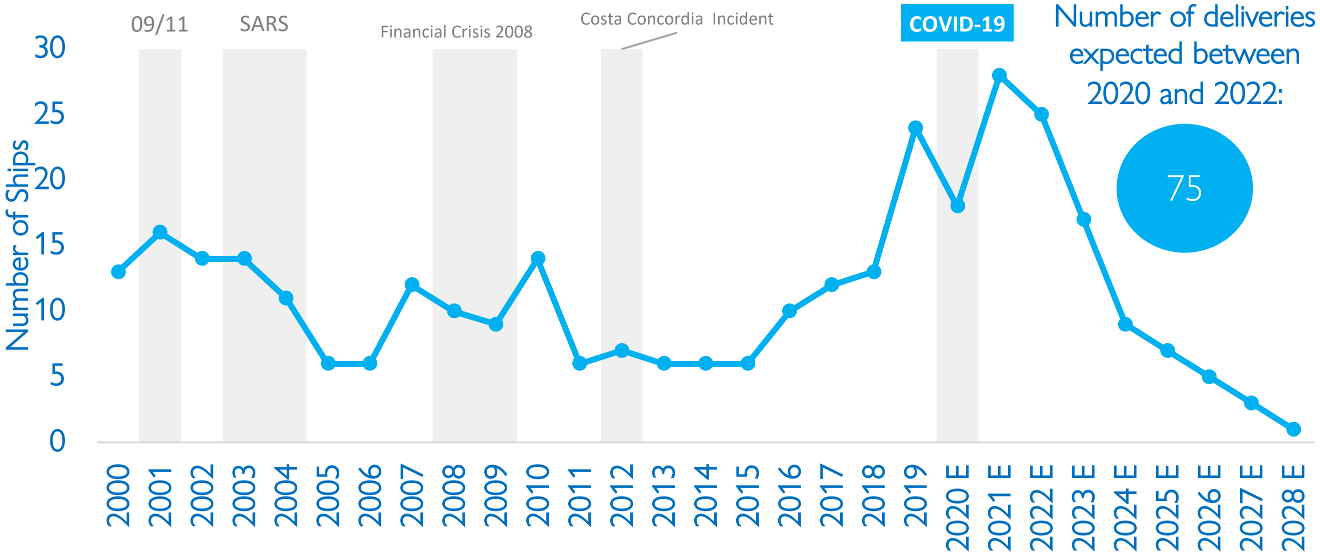
5 In a study performed by BCG, when asked when they would be prepared to cruise again, 54% of inquiries said only after a year or more.[177]

Sources:
Oxford Handbooks; Motley Fool; Cruise Critic;
Boston Consulting Group

… And on the supply side as well, given that constrained supply is expected to last until 2022

Huge drop in new deliveries expected in the coming years

Cruise ships built since 2000[178]



Number of deliveries expected between 2020 and 2022:

75

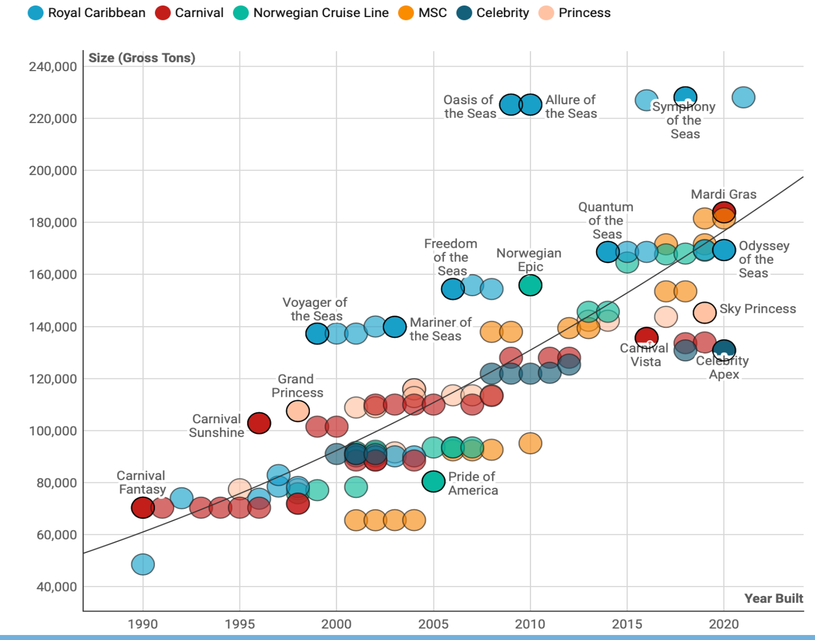
Forecasted constrained supply in restart of operations…

Given the downsizing that major companies are going through, and the future outlook for orders placed for new ships until 2028, it is safe to say that constrained supply is expected in the coming years:

1. Older ships sailed at lower rates, meaning capacity will continue to be limited in the future.
2. Leader's of the industry have confirmed that they will not place orders for new ships anytime soon.[179,180]
3. Adding to that, new ships for coming years are delayed, some with delays of more than a year.

… Whilst in the long-term we predict an increase in supply

Capacity growth of the cruise industry 1990-2020[181]



In 30 years, the size of ships grew from an average of 80,000 to 200,000 gross tons, and we forecast this trend to continue[182]:

1. New ships delivered will be almost 3x bigger than those that were sold at discount during the full stop of operations.
2. Beyond bigger, the new ships will more than make up for the passenger capacity previously lost.

Sources:
Hellenic Shipping News; The Points Guy; Riviera; Cruzely

The industry known as "too big to fail" has, and will continue to demonstrate resilience to crisis, by finding a balance between supply and demand

NOVA SCHOOL OF BUSINESS & ECONOMICS

S&D balance be achieved slowly, as in the next two year it is expected for demand to be higher than supply. After that period, the balanced will be achieved by combining the diminished capacity and supply constraints, as well by increased desire for new experiences.

What to expect in the next 5 years?

1st Stage – Start of operations through phased-in approach (2021 & 2022)

Restrictions of itineraries available

Availability will be limited because destinations will be slow to allow ships in ports and countries are each dealing with very different scenarios of COVID-19 cases.

Expected diminished fear of travelling

- Greater sense of security due to expected availability worldwide of a vaccine.
- Higher confidence once cruises demonstrate they are able to comply with CDC's regulations.

Future Cruise Credits & Onboard Credits

By giving the option to get 125% of value on sailings for 2021 & 2022, cruise lines will have less cabins to fill in a critical time, in which demand might be slow to come around.

2nd Stage – Return to normality & cruising at full capacity in the long-run

Diminished supply constraints

As soon as restart of operations is considered successful and if a vaccine is available, ships will be able to sail at full capacity.

Diminished capacity constraints

- Delayed ships will be joining fleets.
- New deliveries will be mostly related to post-panamax ships (capacity~5,000 guests)

Increased desire for new experiences

A value important to younger generations, particularly to Millennials and Generation Z.

Implications

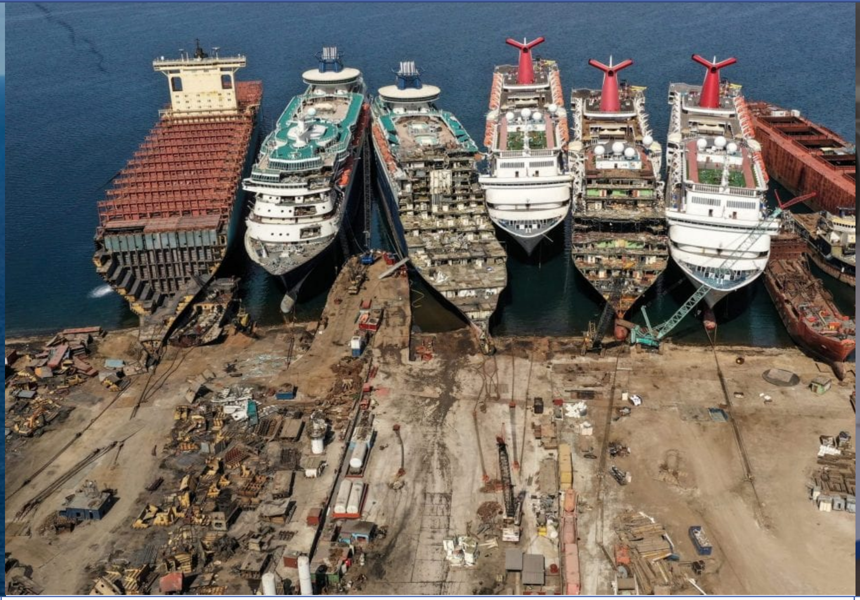
Demand higher than supply — ↑ Prices

1. Economic theory support for prices to more easily going up… or at least to continue strong.
2. Less ships on sea means fewer cruise availability, which leads to positive trend in demand
3. Pent-up consumer demand along with diminished fear of traveling contributes for strong future bookings

Expected balance between S&D — ↓ Prices

1. New deliveries will make up for previous fleet size's loss. Due to their modernity, they will fit perfectly into cruises' focus on economies of scale, further allowing lower costs.
2. Focus on all-inclusive packages, high appealing for young travelers
3. To attract new cruisers it will be crutial to achieve the S&D balance, in order to further decrease prices and bet on shorter cruises.

Sources:



Cruise industry prior to COVID-19

1. The cruise industry resulted from high levels of horizontal integration that began in the 1990's. It has a high level of business concentration, with four cruise operators having 83.2% of market share.
2. Growth in the last 30 years is reflected in investments made in larger ships, in order to increase capacity levels.
3. Revenues can be divided into ticket and onboard Revenue, with Ticket Revenue accounting for 70% of total revenue.
4. As revenues continued to rise on a yearly basis over the last 5 years, costs tend to follow the trend, although margins being quasi-fixed in the industry.
5. Key Performance Indicators regarding pricing performance are Gross Revenue Yield and Net Revenue Yield, which have increased more than 10% in the last 5 years, highlighting economies of scale.
6. Cost efficiency is measured by Gross Cruise Costs per ALBD (excluding fuel), which have been increasing at slow pace.

Cruise industry during COVID-19

1. Cruise KPI's are a balance between capacity and financial drivers, making it hard to capture the real financial impact of the pandemic.
2. Revenues nearly evapoarated in the third quarter of 2020, and the 4 major operators will certainly report a net loss for FY 2020.
3. The industry is facing an unprecedent challenge in developing methods to improve liquidity, with global suspension of operations, no generation of income and increasing liabilities in form of customer deposits for canceled cruises.
4. The industry has focused on retaining customers, innovating operations, implementing health protocols and change the cruise experience, and lastly, getting financial aid.
5. Older ships are not surviving COVID-19, and as small cruise operators, which were the main buyers of this ships, face financial difficulties, scrapyards are the only viable solution to get rid of these ships.

Cruise industry in "the next normal"

1. The most important factors impacting pricing structure are mainly related to ship's characteristics and itinerary.
2. Facilities available onboard and ship class & accomodation type are expected to be a key focus in the future, as number of nights of the itinerary and number of ports of call are expected to decrease significantly.
3. Cruises are one of the sectors with the most sophisticated revenue management strategies, primarly focusing on Price Optimization (supply focused) and Capacity Allocation (supply/demand mix).
4. Future demand does not generate consensus, however, there is a strong belief that a balance will be achieved by pent-up demand and slow cruise confidence increase, combined with constrained supply.
5. Revenue for the industry, in best and most reasonable scenario is expected to return to 2019's levels between 2025 and 2026.

Appendices

Bibliography: Cruises – business side

101. 2020. "Carnival Corporation & plc - Corporate Information – Corporate Timeline". https://www.carnivalcorp.com/corporate-information/corporate-timeline

102. 2020. "Royal Caribbean Group: Our History". https://www.royalcaribbeangroup.com/our-history/

103. 2020. "Norwegian Cruise Line Holdings LTD. – Company History". http://www.nclhltdmedia.com/static-files/a544d245-5ef4-4f37-a08e-f7bac168c65e

104. 2020. "Cruise Industry News: 2020 Annual Report". Cruise Industry News, 2020 (Sample) https://www.cruiseindustrynews.com/flip/cina2020/#p=4

105. Kamery H., Rob. 2004. "An Overview of the Cruise Industry: An Alternative to Land-Based Vacations", Allied Academies International Conference, May 2004. https://www.cruisemarketwatch.com/wp-content/uploads/2008/11/allied-academics-international-conference.pdf

106. Peterson, Jess. 2015. "Barriers to entry in the cruise industry and how they might be overcome". *Medium*, September 15. https://medium.com/@jesspeterson/barriers-to-entry-in-the-cruise-industry-and-how-they-might-be-overcome-c8ec3ab848b

107. 2020. "Carnival Corporation & plc - Financial Information - Annual Reporting: Carnival Corporation & plc Annual Reports". https://www.carnivalcorp.com/financial-information/annual-reporting/ (last checked on December, 2020: Carnival Corporation & plc 2019;2018;2017;2016;2015 Annual Report

108. 2020. "Royal Caribbean Group: Financial Info – SEC Filings, Annual Filings". https://www.rclinvestor.com/financial-info/sec-filings/ (last checked on December, 2020: Annual report which provdes a comprehensive overview of the company for the past year: Calendar Year 2019, 2018, 2017, 2016, 2015)

109. 2020. "Norwegian Cruise Line Holdings Ltd. – Financial Information – Annual Reports". http://www.nclhltdinvestor.com/financial-information/annual-reports (last checked on December , 2020: 2019;2018;2017;2016;2015 Annual Report)

110. 2020. "MSC Cruises – MSC Cruises Annual Reports". https://www.msccruises.com/en-gl/Annual-Reports.aspx (last check on December, 2020: Annual Report 2019;2018;2017;2016;2015)

111. 2020. "Carnival Corporation & plc - Financial Information – Quarterly & Semiannual Reporting". https://www.carnivalcorp.com/financial-information/quarterly-and-semiannual-reports (last checked on December, 2020: Carnival Corporation & plc Third Quarter Report 2016; 2017; 2018; 2019; 2020 on Form 10-Q)

112. 2020. "Royal Caribbean Group: Financial Info – SEC Filings, Quarterly Filings". https://www.rclinvestor.com/financial-info/sec-filings/ (last checked on December, 2020, Quarterly Report which provides a continuing view of the company's financial position: Calendar Year 2020, 2019, 2018, 2017, 2016)

Bibliography: Cruises – business side

113. 2020. “Norwegian Cruise Line Holdings Ltd. – Financial Information – Quarterly Results”. http://www.nclhltdinvestor.com/financial-information/quarterly-results (last checked on December, 2020: Third Quarter 2020;2019;2018;2017;2016 Form 10-Q)

114. Parker, Doug. 2020. “Carnival Gives Canceled Guests Some Good News”. *Cruise Radio*, December 1. https://cruiseradio.net/carnival-gives-canceled-cruise-guests-good-news-dec-2020/

115. 2020. “Royal Caribbean International: FAQ - Questions related to Future Cruise Credit (COVID-19)”, *Royal Caribbean Group*, 2020. https://www.royalcaribbean.com/faq/topics/future-cruise-credit

116. 2020. “NCL’s Peace of Mind: Sail Safe & Flexible Booking”, *Norwegian Cruise Line Holdings*, 2020. https://www.ncl.com/fr/en/why-cruise-norwegian/book-with-confidence

117. Centers for Disease Control and Prevention (CDC). 2020. “Third Modification and Extension of No Sail Order and Other Measures related to Operations. U.S. Department of Health and Human Services (HHS), September 30. https://www.cdc.gov/quarantine/pdf/CDC-NSO-Third-Extension-09-30-2020-p.pdf

118. Centers for Disease Control and Prevention (CDC). 2020. “Framework for Conditional Sailing and Initial Phase COVID-19 Testing Requirements for Protection of Crew”. U.S. Department of Health and Human Services (HHS), October 30. https://www.cdc.gov/quarantine/pdf/CDC-Conditional-Sail-Order_10_30_2020-p.pdf

119. Thomaselli, Rick. 2020. “Congress to Mandate Doctor on Board All Cruise Ships”. *Travel Pulse*, December 12. (https://www.travelpulse.com/news/cruise/congress-to-mandate-doctor-on-board-all-cruise-ships.html)

120. 2020. “Carnival Corporation Confirms Company-Wide Layoffs”. Cruise Industry News, May 14. https://www.cruiseindustrynews.com/cruise-news/22943-carnival-corporation-confirms-company-wide-layoffs.html

121. 2020. “Norwegian Extends Pay Cuts for Top Executives”. Cruise Industry News, June 4. https://www.cruiseindustrynews.com/cruise-news/23046-norwegian-extends-pay-cuts-for-top-executives.html

122. Spinks, Rosie. 2020. “Carnival and Royal Caribbean Receive UK Coronavirus Aid after Cruise Snub in U.S. Skift, July 16. https://skift.com/2020/07/16/carnival-and-royal-caribbean-receive-uk-coronavirus-aid-after-cruise-snub-in-u-s/

123. Hochberg, Matt. 2020. ”Cruise lines left out of new stimulus bill again”. *Royal Caribbean Blog*, December 21. https://www.royalcaribbeanblog.com/2020/12/21/cruise-lines-left-out-of-new-stimulus-bill-again)

NOVA SCHOOL OF BUSINESS & ECONOMICS

Bibliography: Cruises – business side

124. Norton, Theresa. 2020. "Royal Caribbean Launches $40 Million Loan Program for Travel Advisors". *Travel Pulse*, December 21. https://www.travelpulse.com/news/cruise/royal-caribbean-launches-40-million-loan-program-for-travel-advisors.html

125. 2020. "New No Cruise Order Would Be Neutral for US Cruise Lines, Ports". *Fitch Ratings,* December 4. https://www.fitchratings.com/research/corporate-finance/new-no-cruise-order-would-be-neutral-for-us-cruise-lines-ports-04-12-2020

126. Hines, Morgan. 2020. "Spanish cruise line, owned partly by Royal Caribbean, reorganizing due to coronavirus hit", *USA Today Travel*, 2020. https://eu.usatoday.com/story/travel/cruises/2020/06/23/royal-caribbean-partner-files-reorganization-ships-fate-uncertain-pullmantur-cruises/3241312001/)

127. 2020."Pullmantur Files for Reorganization". *Cruise Industry News*, June 22 (link: https://www.cruiseindustrynews.com/cruise-news/23124-pullmantur-files-for-reorganization.html)

128. 2020."CMV Becomes the Third Cruise Line To Go Out of Business in a Month". *The Maritime Executive*, July 20. https://www.maritime-executive.com/article/cmv-becomes-the-third-cruise-line-to-go-out-of-business-in-a-month

129. 2020."CMV-Cruise and Maritime Voyages goes into administration/bankruptcy". *Cruise Mapper*, July 20. https://www.cruisemapper.com/news/7687-cruise-maritime-voyages-goes-into-administration

130. Hancock, Alice. 2020. "Cruise industry's billion-dollar question: what to do with the ships?". Financial Times, August 31. https://www.ft.com/content/b0d09282-1559-4169-a3ec-92c12ebfb78e

131. Thakkar, Emrys. 2020. "Looks Like a Sad Ending for the Pullmantur Cruise Ships". *Cruise Hive,* July 3. https://www.cruisehive.com/looks-like-a-sad-ending-for-the-pullmantur-cruise-ships/40498)

132. 2020. "Fate of Vintage Cruise Ships Uncertain as More are Scrapped". *The Maritime Executive*, November 11. https://www.maritime-executive.com/article/fate-of-vintage-cruise-ships-uncertain-as-more-are-scrapped)

133. Levin, Tim. 2020. "Carnival plans to sell of 12% of its fleet as the pandemic keeps the US cruise industry at a standstill". *Business Insider*, September 17. https://www.businessinsider.com/carnival-selling-18-ships-amid-billions-losses-no-sail-order-2020-9

134. Gray Faust, Chris. 2020. "Carnival Corporation to Sell More Cruise Ships". *Cruise Critic*, September 15. https://www.cruisecritic.com/news/5594/

135. McMahon, Shannon. 2020. "Carnival is selling 18 cruise ships amid financial struggles and CDC's no-sail order". *The Washington Post*, September 16. https://www.washingtonpost.com/travel/2020/09/16/carnival-cruise-ships-covid-sale/

Bibliography: Cruises – business side

136. Thakkar, Emrys. 2020. "Which Cruise Ships are Being Scrapped or Sold Due to the COVID-19 Pandemic". *Cruise Hive*, December 8. https://www.cruisehive.com/which-cruise-ships-are-being-scrapped-or-sold-due-to-the-covid-10-pandemic/40597

137. 2020. "Royal Caribbean Sells Majesty and Empress of the Seas". *Cruise Industry News*, December 16. https://www.cruiseindustrynews.com/cruise-news/24059-royal-caribbean-s-majesty-and-empress-sold.html

138. 2020. "Royal Caribbean Sells Its Two Oldest Cruise Ships". *The Maritime Executive*, December 16. https://www.maritime-executive.com/article/royal-caribbean-sells-its-two-oldest-cruise-ships

139. Street, Francesca. 2020. "Cruise ships torn apart after coronavirus sell off". *CNN Travel*, October 7. https://edition.cnn.com/travel/article/cruise-ship-demolition-photos-aliaga-turkey/index.html

140. Platt Craig. 2020. "Cruise ships and COVID-19: Giant ships beached at scrapyard in Turkey, set to be broken up". *Travelller,* August 4. https://www.traveller.com.au/cruise-ships-and-covid19-giant-ships-beached-at-scrapyard-in-turkey-set-to-be-broken-up-h1prh5

141. Usta, Bulent. 2020. "Cruise Ships More Pouplar Than Ever in One Part of Turket: The Scrapyard". *Skift*, October 2. https://skift.com/2020/10/02/cruise-ships-more-popular-than-ever-in-one-part-of-turkey-the-scrapyard/

142. Sullivan, Isabella. 2020."Fred Olsen Cruise Lines announced purchase of two Holland America Line cruise ships". *Cruise Trade News*, July 16. https://www.cruisetradenews.com/fred-olsen-cruise-lines-announces-purchase-holland-america-line-ships/

143. 2020. "Fred. Olsen Buys the Amsterdam and Rotterdam from Holland America". *Cruise Industry News*, July 15. https://www.cruiseindustrynews.com/cruise-news/23248-fred-olsen-buys-amsterdam-and-rotterdam.html

144. 2020. "Fred. Olsen Cruise Lines buys new ships & vows to evolve for cruising "on other side" of the pandemic". *Group Leisure & Travel*, July 17. https://www.groupleisureandtravel.com/news-and-views/fred-olsen-cruise-lines-buys-new-ships-and-vows-to-evolve/8733.article

145. 2020. "Fitch Affirms Broward Country, FL's Port Facility Revs at 'A'; Outlook Negative". *Fitch Ratings*, November 11. https://www.fitchratings.com/research/infrastructure-project-finance/fitch-affirms-broward-county-fl-port-facility-revs-at-a-outlook-negative-11-11-2020

146. 2020. "COVID-19: Briefing materials, Global health and crisis response". *McKinsey & Company*, October 30.

Bibliography: Cruises – business side

147. Business Research & Economic Advisors. 2020. "The Economic Contribution of the International Cruise Industry in the United States in 2019". *Cruise Lines International Association (CLIA)*, 2020. https://cruising.org/-/media/research-updates/research/2019-usa-cruise-eis.ashx

148. Business Research & Economic Advisors. 2019. "The Global Contribution of Cruise Tourism 2018". *Cruise Lines International Association (CLIA)*, November 2019. https://cruising.org/-/media/research-updates/research/global-cruise-impact-analysis---2019--final.ashx

149. Business Research & Economic Advisors. 2018. "The Global Economic Contribution of Cruise Tourism 2017". *Cruise Lines International Association (CLIA)*, November 2018. https://cruising.org/-/media/CLIA/Research/Global%202018%20EIS

150. Business Research & Economic Advisors. 2017. "The Global Economic Contribution of Cruise Tourism 2016". *Cruise Lines International Association (CLIA)*, November 2017. https://cruising.org/-/media/research-updates/research/economic-impact-studies/2016-global-economic-impact-study.ashx

151. Business Research & Economic Advisors, 2016. "The Global Economic Contribution of Cruise Tourism 2015". *Cruise Lines International Association (CLIA)*, November 2016. https://cruising.org/-/media/research-updates/research/global-cruise-impact-analysis---2015.ashx

152. 2020. "Real GDP growth: Annual percent change". *International Monetary Fund*, October. https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

153. Martin, Eric. 2020. "Most cruiseships won't be operational until second half of 2021, UBS predicts". *Trade Winds News*, September 10. https://www.tradewindsnews.com/cruise-and-ferry/most-cruiseships-wont-be-operational-until-second-half-of-2021-ubs-predicts/2-1-873188

154. Thomaselli, Rich. 2020. "Should Cruise Ships Make COVID-19 Vaccine a Passenger Requirement?. *Travel Pulse*, December 13. https://www.travelpulse.com/news/cruise/should-cruise-ships-make-covid-19-vaccine-a-passenger-requirement.html

155. 2020. "Financial Breakdown of Typical Cruiser". *Cruise Market Watch*, 2020. https://cruisemarketwatch.com/financial-breakdown-of-typical-cruiser/

156. NG, Rachel. 2020. "Why cruise ships are setting sail again as COVID-19 rages". *National Geographic*, December. https://www.nationalgeographic.com/travel/2020/12/how-cruise-ships-are-sailing-again-during-coronavirus/

157. Jainchill, Johanna. 2020. "All ashore – but only on the cruise lines' terms". *Travel Weekly*, August 31. https://www.travelweekly.com/Cruise-Travel/all-ashore-on-cruise-lines-terms

158. Jainchill, Johanna. 2020. "Private islands a big factor in Norwegian Cruise Line Holdings' restart". *Travel Weekly*, November 10. https://www.travelweekly.com/Cruise-Travel/Private-islands-factor-Norwegian-Cruise-Line-restart

Bibliography: Cruises – business side

159. Marcellin, Frances. 2020. "Greece cruises on: the long journey back to normal". *Ship Technology*, December 21. https://www.ship-technology.com/features/greece-cruise-industry/

160. Wee, Sui-Lee. 2020. "A Covid-Free Cruise Takes Planning, but the Strip Show Goes On". *The New York Times*, December 3. https://www.nytimes.com/2020/12/03/business/singapore-cruise-covid-19.html

161. Dragicevic, Nina. 2020. "Cruise lines are looking to innovate and stay afloat in a post-pandemic world". *CBC*, November 24. https://www.cbc.ca/documentaries/the-nature-of-things/cruise-lines-are-looking-to-innovate-and-stay-afloat-in-a-post-pandemic-world-1.5814149

162. Saunders, Aaron. 2020. "Royal Caribbean will restart with short cruises to private island, may seek volunteers for test runs". *USA Today Travel.* https://eu.usatoday.com/story/travel/cruises/2020/11/06/royal-caribbean-restart-private-island-cruises-seeking-volunteers/6186911002

163. Jainchill, Johanna. 2020. "Private destinations key to cruise's restart". *Travel Weekly*, July 17. https://www.travelweekly.com/Cruise-Travel/Private-destinations-key-to-cruising-restart

164. Sebastian, Dave. 2020. "Cruises and COVID-19: When U.S. Sailings Could Restart and What Safety Precautions Are Expected". *The Wall Street Journal*, December 15. https://www.wsj.com/articles/cruises-and-covid-19-when-u-s-sailings-could-restart-and-what-safety-precautions-are-expected-11607941801

165. Ledsom, Alex. 2020. "The Future of Cruises – Lengthy Boarding, The End of Buffets And More Staggered Dining". *Forbes*, June 14. https://www.forbes.com/sites/alexledsom/2020/06/14/the-future-of-cruiseslengthy-boarding-the-end-of-buffets-and-more-staggered-dining/?sh=3ae461a366b8

166. Romanenko, Maria. 2020. "Cruise Bookings Surge, People Splurge for 2022 and 2023". *Cruise Industry News*, December 10. https://www.cruiseindustrynews.com/cruise-news/24026-cruise-bookings-surge-people-splurge-for-2022-and-2023.html

167. McDaniel, Colleen. 2020. "State of the Cruise Industry". December. https://www.cruisecritic.com/state-of-the-industry/

168. Mcclure, Rosemary. 2020. "Expect a price jump, and new COVID-19 rules, when booking your next cruise". *Los Angeles Times*, October 19. https://www.latimes.com/travel/story/2020-10-19/cruise-price-increase-covid-19-rules-coronavirus

169. Jainchill, Johanna. 2020. "Will a cruise capacity dip push pricing?". *Travel Weekly,* October 15. https://www.travelweekly.com/Cruise-Travel/Cruise-companies-in-no-hurry-to-place-orders-for-new-ships

170. 2020. "Cruise Industry News: Return to Service". *Cruise Industry News,* September 2020. https://www.cruiseindustrynews.com/pdf/wp-content/uploads/2020/09/CIN2020_RTS.pdf

Bibliography: Cruises – business side

171. Ayvaz-Cavdaroglu. K. Gauri, Dinesh. Webster, Scott. 2019. "Empirical Evidence of Revenue Management in the Cruise Line Industry". *Journal of Travel Research*, 2019, Vol. 58 (I) 104-120. https://journals.sagepub.com/doi/10.1177/0047287517737178

172. Owens, John. Love, Alison. 2013. "A Year on from Costa Concordia: How the cruise industry fought back". *PR Week*, January 17. https://www.prweek.com/article/1167049/year-costa-concordia-cruise-industry-fought-back

173. Harpaz J., Beth. 2013. "Experts Say Cruise Industry Starting To Recover After Costa Concordia Accident". *Travel Agent Central*, February 7. https://www.travelagentcentral.com/experts-say-cruise-industry-starting-to-recover-after-costa-concordia-accident

174. Ritucci, Johnathan. 2020. "Analysts Still Forecast Slow Recovery for Cruise Liners". *Invisible Alpha*, June 12. https://blog.visiblealpha.com/analysts-still-forecast-slow-recovery-for-cruise-liners

175. H. Lieberman, Warren. 2012. The Oxford Handbook of Pricing Management: Chapter 12 – Pricing in the Cruise Line Industry. *Oxford Handbooks*, November 2012. https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199543175.001.0001/oxfordhb-9780199543175-e-12?rskey=Y9FsBe&result=1

176. Munarriz, Rick. 2020. "1 Trick, 2 Treats: Cruise Line Stocks". *The Motley Fool*, October 31. https://www.fool.com/investing/2020/10/31/1-trick-2-treats-cruise-line-stocks/

177. Koslow, Lara. Lee, Jean. Guggenheim, Jason. Jhunjhunwala, Pranay. 2020. "COVID-19 Consumer Sentiment Snapshot #10: The Trip Back", *Boston Consulting Group*, May 18. https://www.bcg.com/publications/2020/covid-consumer-sentiment-survey-snapshot-5-18-20

178. 2020. "The Cruise industry's COVID-19 crisis: how bad is it really?". *Hellenic Shipping News*, August 14. https://www.hellenicshippingnews.com/the-cruise-industrys-covid-19-crisis-how-bad-is-it-really/

179. Sloan, Gene. 2020. "New orders for cruise ships could be on hold for some time". *The Points Guy*, October 7. https://thepointsguy.com/news/cruise-ship-orders-on-hold/

180. Wingrove, Martyn. 2020. "Pandemic decimates cruise ships orders". *Riviera*, November 23. https://www.rivieramm.com/news-content-hub/news-content-hub/pandemic-decimates-cruise-ship-orders-61947

181. Callais, Tanner. 2020. "Chart: See the Dramatic Rise in the Size of Cruise Ships". *Cruzely*, April 26. https://cruzely.com/chart-see-the-dramatic-rise-in-the-size-of-cruise-ships/

182. Sloan, Gene. 2019. "The Limit Does Exit: Cruise Ships Keep Growing, but Can Only Get So Big". *The Points Guy*, April 18. https://thepointsguy.com/news/why-cruise-ships-keep-getting-bigger/

Concepts & theory behind KPI's – cruise Industry: Capacity Measurement Metrics

Berth has two different meanings for the cruise industry…

Berth (1st meaning):

For a ship, the number of berths on a vessel is equivalent to the number of people who can sleep onboard.

Berth (2nd meaning):

Berth can also be used to designate a "ship's parking lot", related with dock space.

Primary capacity measurement metric in the cruise industry

Available lower berth day (ALBD)

- The most general capacity measurement metric for profitability applied in the cruise industry us known as available lower berth day (ALBD), which is based on the assumption that each cabin on a cruise ship accomodates two passengers.
- It is computed by multiplying passenger capacity by revenue-producing ship operating days in a given period.
- ALBD is the standard measure of passenger capacity analyzed in both Carnival Corporation (CC) and MSC Cruises' annual reports. However, Royal Caribbean Group (RCG) designates the same metric as available passenger cruise days (APCD), whilst Norwegian Cruise Line Holdings (NCLH) addresses the metric as capacity days.
- For simplification purposes, the term used in this document is available lower berth days (ALBD).

Summary per cruise operator

CC	Available lower berth day (ALBD)
RCG	Available passenger cruise day (APCD)
NCLH	Capacity days
MSC	Available lower berth days (ALBD)

Secondary capacity measurement metrics in the cruise industry

Occupancy (%)

Calculated by dividing passenger cruise days by ALBD.
When the percentage is higher than 100%, it indicates that three or more cruisers occupied the same cabin.

Passenger cruise days

Represents the number of passengers carried for the period, multiplied by the number of days, that is, the duration, of respective cruises.

Sources:
Carnival Corporation; Royal Caribbean Group;
Norwegian Cruise Line Holdings; MSC Cruises;

Concepts & theory behind KPI's – cruise Industry: Revenue drivers and cost drivers for cruise industry

Revenue drivers are comprised by Passenger Ticket Revenue and Onboard and Other Revenue, while cost drivers are comprised of six different types of costs, as follows:

Revenue Drivers are comprised by:

Passenger Ticket Revenue:

- Revenue recognized from sale of passenger tickets and, if any, the sale of air transportation to the embarkation port.
- The cruise ticket includes accommodations, meals (including snacks at numerous venues), access to amenities (such as swimming pools, water slides, water parks, whirlpools, health clubs and sun decks), supervised youth programs, entertainment (comedy shows, live music and nightclubs) and visits to multiple destinations.

Onboard and Other Revenue:

- Revenues that result from purchase of goods & services onboard cruise ships, cancellation fees, sales of vacation protection insurance and tours.
- It can also include beverage sales, casino gaming, shore excursions, retail sales, internet services and speciality restaurants.

Cost Drivers are comprised by:

Commisions, Transportation and Other:

- Costs directly linked to passenger ticket revenues (including travel agent commissions, air and other transportation expenses, port costs).

Onboard and Other:

- Direct costs related to onboard revenues, that may include costs of products sold on ships and vacations protection insurance premiums).

Payroll and Related:

- Represents costs associated with shipboard personnel.

Fuel:

- Includes fuel and related delivery, storage and emission consumable costs.

Food:

- Includes food costs for both guests and crew.

Other Ship Operating Expenses and Tours

Sources:
Carnival Corporation; Royal Caribbean Group;
Norwegian Cruise Line Holdings; MSC Cruises;

Concepts & theory behind KPI's – cruise Industry: Key performance indicators in the cruise industry are determined by combining the most relevant metric of capacity measurement, ALBD, and profitability drivers

NOVA SCHOOL OF BUSINESS & ECONOMICS

There are four main Key Performance Indicators in the cruise industry, two for each of the primary drivers: revenues and operating expenses

Key Performance Indicators

The following indicators are believed to be the most relevant in managing **pricing performance** and **business on a daily basis**:

Gross Revenue Yield: represents gross cruise revenues per ALBD.

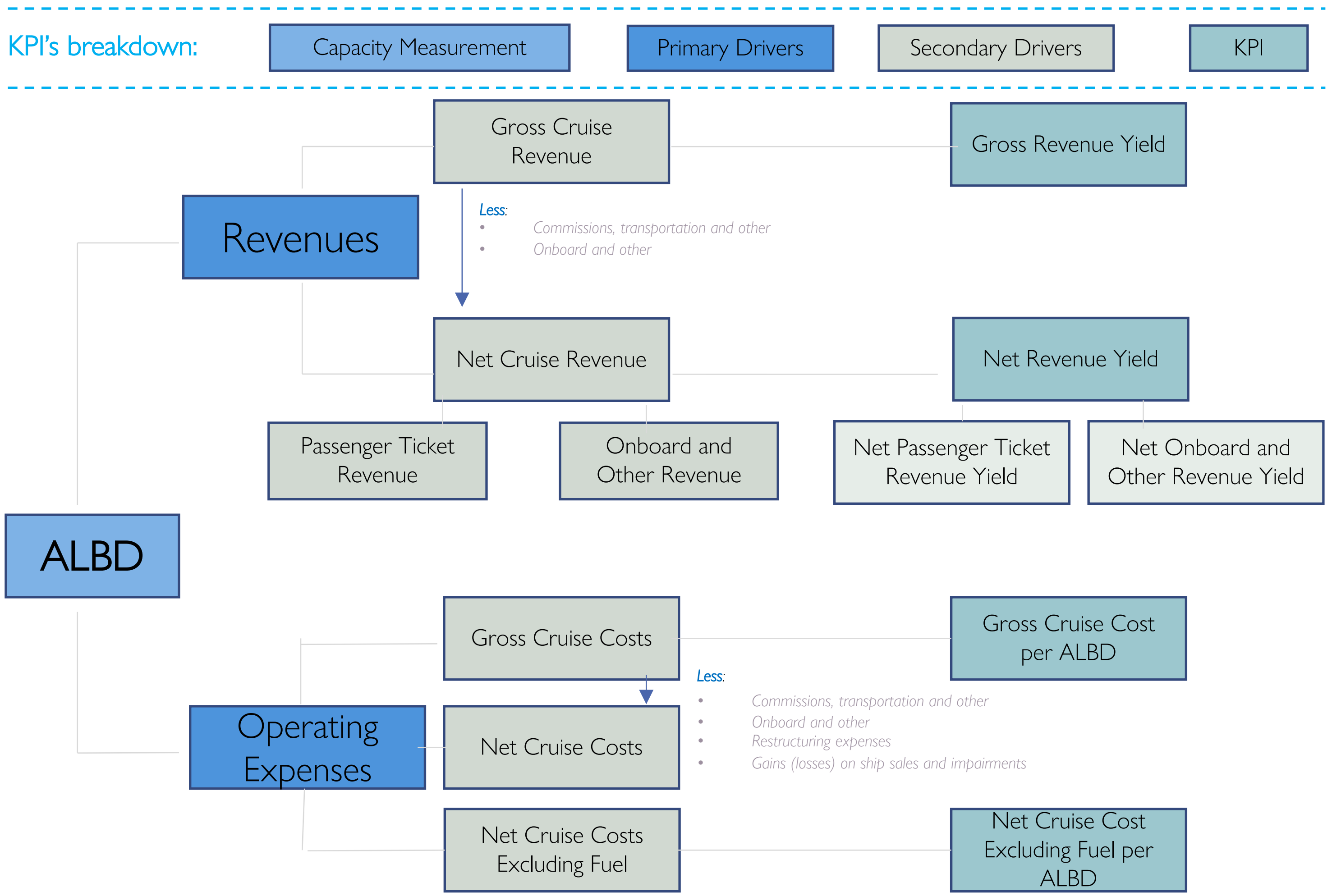
Net Revenue Yield: represents gross cruise revenue excluding commissions and transportation; and onboard and other revenue per ALBD.

- Net Passenger Ticket Revenue Yield: equals net passenger ticket revenue per ALBD.
- Net Onboard and Other Revenue Yield: equals net onboard and other revenue per ALBD.

The following indicators are believed to be the most accurate in managing **cost efficiency** in the industry:

Gross Cruise Cost per ALBD: represents the sum of all operating expenses and marketing, selling & administrative expenses per ALBD.

Net Cruise Costs Excluding Fuel per ALBD: represents gross cruise costs excluding commissions, transportation and other expenses; onboard and other expenses and fuel, per ALBD.



Sources:
Carnival Corporation; Royal Caribbean Group;
Norwegian Cruise Line Holdings; MSC Cruises;

Key performance indicators analysis: Carnival Corporation – Full Year 2015-2019

NOVA SCHOOL OF BUSINESS & ECONOMICS

Key Performance Indicators Analysis - Carnival Corporation (2015-2019)					
Highlights					
	2015	**2016**	**2017**	**2018**	**2019**
Number of Ships	99	102	103	104	104
Passengers Carried (in thousands)	10 800	11 500	12 130	12 407	12 866
Passenger Capacity	216 000	226 000	232 000	237 000	249 000
ALBD's (in thousands)	77 307	80 002	82 303	83 872	87 424
Growth in ALBD's	-	3,49%	2,88%	1,91%	4,24%
Occupancy (%)	104,80%	105,90%	105,90%	106,90%	106,80%

Revenues					
(in millions)	**2015**	**2016**	**2017**	**2018**	**2019**
Passenger Ticket Revenue	11 601	12 090	12 944	13 930	14 104
Passenger Ticket Revenue as % Total Revenue	74,90%	74,82%	74,93%	74,86%	69,02%
Onboard and Other Revenue	3 887	4 068	4 330	4 679	6 331
Onboard and Other Revenue as % Total Revenue	25,10%	25,18%	25,07%	25,14%	30,98%
Gross Cruise Revenue	**15 488**	**16 158**	**17 274**	**18 609**	**20 435**
Less:					
Commissions, transportation and other	2161	2240	2359	2590	2720
Onboard and Other	526	553	587	638	2101
Net Passenger Ticket Revenues	9 440	9 850	10 585	11 340	11 384
Net Onboard and Other Revenue	3 361	3 515	3 743	4 041	4 230
Net Cruise Revenues	**12 801**	**13 365**	**14 328**	**15 381**	**15 614**

KPI's regarding Revenue					
	2015	**2016**	**2017**	**2018**	**2019**
ALBD's	**77 307 323**	**80 002 092**	**82 302 887**	**83 872 441**	**87 424 190**
Gross Revenue Yield	$ 200,34	$ 201,97	$ 209,88	$ 221,87	$ 233,75
% increase (decrease)	-	0,81%	3,92%	5,71%	5,35%
Net Revenue Yield	$ 165,59	$ 167,06	$ 174,09	$ 183,39	$ 178,60
% increase (decrease)	-	0,89%	4,21%	5,34%	-2,61%
Net Passenger Ticket Revenue Yield	$ 122,11	$ 123,12	$ 128,61	$ 135,21	$ 130,22
% increase (decrease)	-	0,83%	4,46%	5,13%	-3,69%
Net Onboard and Other Revenue Yield	$ 43,48	$ 43,94	$ 45,48	$ 48,18	$ 48,38
% increase (decrease)	-	1,06%	3,51%	5,94%	0,42%

Operating Costs and Expenses					
(in millions)	**2015**	**2016**	**2017**	**2018**	**2019**
Commissions, Transportation and Other	2 161	2 240	2 359	2 590	2 720
Commissions, Transportation and Other as % of Revenues	13,95%	13,86%	13,66%	13,92%	13,31%
Onboard and Other	526	553	587	638	2 101
Onboard and Other as % of Revenues	3,40%	3,42%	3,40%	3,43%	10,28%
Payroll and Related	1 859	1 993	2 107	2 190	2 249
Payroll and Related as % of Revenues	12%	12%	12%	12%	11%
Fuel	1 249	915	1 244	1 619	1 562
Fuel as % of Revenue	8,06%	5,66%	7,20%	8,70%	7,64%
Food	981	1 005	1 031	1 066	1 083
Food as % of Revenye	6,33%	6,22%	5,97%	5,73%	5,30%
Other Ship Operating, Tour and Others	2 671	2 677	3 173	2 987	3 193
Other Ship Operating, Tour and Others as % of Revenues	17,25%	16,57%	18,37%	16,05%	15,63%
Total Operating Costs and Expenses	**9 447**	**9 383**	**10 501**	**11 090**	**12 908**

Costs/Expenses					
(in millions)	**2015**	**2016**	**2017**	**2018**	**2019**
Cruise Operating Expenses	9 292	9 231	10 338	10 910	12 641
Cruise Selling and administrative expenses	2 058	2 188	2 250	2 422	2 452
Gross Cruise Costs	**11 350**	**11 419**	**12 588**	**13 332**	**15 093**
Less:					
Commissions, Transporation and Other	2 161	2 240	2 359	2 590	2 720
Onboard and Other	526	553	587	638	2 101
Restructuring Expenses	25	2	3	1	10
Gains (losses) on ship sales and impairments	8	2	- 298	38	16
Other	-	- 41	-	- 2	- 43
Net Cruise Costs	**8 646**	**8 585**	**9 341**	**10 141**	**10 235**
Less fuel	1 249	915	1 244	1 619	1 562
Net Cruise Costs Exluding Fuel	**7 397**	**7 670**	**8 097**	**8 522**	**8 673**

KPI's regarding Expenses					
	2015	**2016**	**2017**	**2018**	**2019**
ALBD's	**77 307 323**	**80 002 092**	**82 302 887**	**83 872 441**	**87 424 190**
Gross Cruise Cost per ALBD	$ 146,82	$ 142,73	$ 152,95	$ 158,96	$ 172,64
% increase (decrease)	-	-2,78%	7,16%	3,93%	8,61%
Net Cruise Costs Excluding Fuel per ALBD	$ 95,68	$ 95,87	$ 98,38	$ 101,61	$ 99,21
% increase (decrease)	-	0,20%	2,62%	3,28%	-2,36%

Key performance indicators analysis: Carnival Corporation – 9 Months ended August 31, 2016-2020

NOVA SCHOOL OF BUSINESS & ECONOMICS

Key Performance Indicators - Carnival Corporation (2016-2020 - Nine Months Ended Aug 31)

Highlights

	2016	2017	2018	2019	2020
Passengers Carried (in millions)	8 606	9 116	9 393	9 790	3 489
ALBD's (in thousands)	59 555	61 541	62 626	65 671	25 598
Growth in ALBD's	-	3,33%	1,76%	4,86%	-61,02%
Occupancy (%)	107%	106,70%	107,80%	107,80%	103,10%

Revenues

(in millions)	2016	2017	2018	2019	2020
Passenger Ticket Revenue	9 217	9 814	10 694	10 934	3 680
Passenger Ticket Revenue as % Total Revenue	75%	75%	75%	68%	66%
Onboard and Other Revenue	3 047	3 237	3 509	5 110	1 881
Onboard and Other Revenue as % Total Revenue	25%	25%	25%	32%	34%
Gross Cruise Revenue	**12 264**	**13 051**	**14 203**	**16 044**	**5 561**
Less:					
Commissions, transportation and other	1723	1781	2000	2125	1098
Onboard and Other	411	438	485	1620	593
Net Passenger Ticket Revenues	7 494	8 033	8 694	8 809	2 582
Net Onboard and Other Revenue	2 636	2 799	3 024	3 490	1 288
Net Cruise Revenues	**10 130**	**10 832**	**11 718**	**12 299**	**3 870**

KPI's regarding Revenue

	2016	2017	2018	2019	2020
ALBD's	**59 555**	**61 541**	**62 626**	**65 671**	**25 598**
Gross Revenue Yield	$ 205,93	$ 212,07	$ 226,79	$ 244,31	$ 217,24
% increase (decrease)	-	2,98%	6,94%	7,72%	-11,08%
Net Revenue Yield	$ 170,09	$ 176,01	$ 187,11	$ 187,28	$ 151,18
% increase (decrease)	-	3,48%	6,31%	0,09%	-19,27%
Net Passenger Ticket Revenue Yield	$ 125,83	$ 130,53	$ 138,82	$ 134,14	$ 100,87
% increase (decrease)	-	3,73%	6,35%	-3,38%	-24,80%
Net Onboard and Other Revenue Yield	$ 44,26	$ 45,48	$ 48,29	$ 53,14	$ 50,32
% increase (decrease)	-	2,76%	6,17%	10,06%	-5,32%

Operating Costs and Expenses

(in millions)	2016	2017	2018	2019	2020
Commissions, Transportation and Other	1 723	1 781	2 000	2 125	1 098
Commissions, Transportation and Other as % of Revenues	24,39%	22,59%	23,96%	13,24%	19,74%
Onboard and Other	411	438	485	1 620	593
Onboard and Other as % of Revenues	5,82%	5,56%	5,81%	10,10%	10,66%
Payroll and Related	1 488	1 552	1 638	1 671	1 563
Payroll and Related as % of Revenues	21%	20%	20%	10%	28%
Fuel	648	914	1 166	1 204	718
Fuel as % of Revenue	9,17%	11,59%	13,97%	7,50%	12,91%
Food	755	774	804	821	404
Food as % of Revenye	10,69%	9,82%	9,63%	5,12%	7,26%
Other Ship Operating, Tour and Others	2 039	2 425	2 255	2 391	3 178
Other Ship Operating, Tour and Others as % of Revenues	28,86%	30,76%	27,01%	14,90%	57,15%
Total Operating Costs and Expenses	**7 064**	**7 884**	**8 348**	**9 832**	**7 554**

Costs/Expenses

(in millions)	2016	2017	2018	2019	2020
Cruise Operating Expenses	6 939	7 752	8 208	9 634	7 556
Cruise Selling and administrative expenses	1 606	1 637	1 772	1 792	1 435
Gross Cruise Costs	**8 545**	**9 389**	**9 980**	**11 426**	**8 991**
Less:					
Commissions, Transporation and Other	1 723	1 781	2 000	2 125	1 098
Onboard and Other	411	438	485	1 620	593
Restructuring Expenses	2	3	-	-	42
Gains (losses) on ship sales and impairments	2	300	39	11	3 819
Other	39	-	1	43	223
Net Cruise Costs	**6 372**	**6 867**	**7 533**	**7 649**	**11 384**
Less fuel	648	914	1 166	1 204	718
Net Cruise Costs Exluding Fuel	**5 724**	**5 953**	**6 367**	**6 445**	**10 666**

KPI's regarding Expenses

	2016	2017	2018	2019	2020
ALBD's	**59 555**	**61 541**	**62 626**	**65 671**	**25 598**
Gross Cruise Cost per ALBD	$ 143,48	$ 152,56	$ 159,36	$ 173,99	$ 351,24
% increase (decrease)	-	6,33%	4,45%	9,18%	101,87%
Net Cruise Costs Excluding Fuel per ALBD	$ 96,11	$ 96,73	$ 101,67	$ 98,14	$ 416,67
% increase (decrease)	-	0,64%	5,10%	-3,47%	324,57%

Key performance indicators analysis: Royal Caribbean Group – Full Year 2015-2019

NOVA SCHOOL OF BUSINESS & ECONOMICS

Key Performance Indicators Analysis - Royal Caribbean Group (2015-2019)

Highlights

	2015	2016	2017	2018	2019
Number of Ships	47	49	49	60	63
Passengers Carried (in thousands)	5402	5 755	5 768	6 084	6 554
ALBD's (in thousands)	36 647	37 845	36 931	38 425	41 432
Growth in ALBD's	-	3,27%	-2,41%	4,05%	7,83%
Occupancy (%)	105,1%	106,4%	108,4%	108,9%	108,1%

Revenues

(in millions)	2015	2016	2017	2018	2019
Passenger Ticket Revenue	6 059	6 149	6 313	6 793	7 857
Passenger Ticket Revenue as % Total Revenue	73,01%	72,38%	71,92%	71,55%	71,75%
Onboard and Other Revenue	2 240	2 347	2 465	2 701	3 094
Onboard and Other Revenue as % Total Revenue	26,99%	27,62%	28,08%	28,45%	28,25%
Gross Cruise Revenue	**8 299**	**8 496**	**8 778**	**9 494**	**10 951**
Less:					
Commissions, transportation and other	1 401	1 350	1 363	1 434	1 656
Onboard and Other	553	494	496	537	640
Net Passenger Ticket Revenues	4 658	4 800	4 950	5 359	6 201
Net Onboard and Other Revenue	1 687	1 854	1 969	2 164	2 454
Net Cruise Revenues	**6 345**	**6 653**	**6 919**	**7 523**	**8 655**

KPI's regarding Revenue

	2015	2016	2017	2018	2019
ALBD's / APCD's	**36 646 639**	**37 844 644**	**36 930 939**	**38 425 304**	**41 432 451**
Gross Revenue Yields (Gross Yields)	$ 226,46	$ 224,51	$ 237,68	$ 247,07	$ 264,30
% increase (decrease)	-	-0,86%	5,87%	3,95%	6,97%
Net Revenue Yields (Net Yields)	$ 173,15	$ 175,80	$ 187,35	$ 195,78	$ 208,88
% increase (decrease)	-	1,53%	6,57%	4,50%	6,70%
Net Passenger Ticket Revenue Yields	$ 127,11	$ 126,82	$ 134,03	$ 139,46	$ 149,66
% increase (decrease)	-	-0,22%	5,68%	4,05%	7,31%
Net Onboard and Other Revenue Yield	$ 46,04	$ 48,98	$ 53,32	$ 56,31	$ 59,22
% increase (decrease)	-	6,38%	8,87%	5,61%	5,17%

Operating Costs and Expenses

(in millions)	2015	2016	2017	2018	2019
Commissions, Transportation and Other	1 401	1 350	1 363	1 434	1 656
Commissions, Transportation and Other as % of Revenues	16,88%	15,89%	15,53%	15,10%	15,13%
Onboard and Other	553	494	496	537	640
Onboard and Other as % of Revenues	6,66%	5,81%	5,65%	5,66%	5,84%
Payroll and Related	862	883	853	925	1 079
Payroll and Related as % of Revenues	10,38%	10,39%	9,72%	9,74%	9,85%
Fuel	796	714	681	711	698
Fuel as % of Revenue	9,59%	8,40%	7,76%	7,49%	6,37%
Food	480	486	493	521	584
Food as % of Revenye	5,78%	5,72%	5,61%	5,49%	5,33%
Other Ship Operating, Tour and Others	1 008	1 090	1 011	1 135	1 406
Other Ship Operating, Tour and Others as % of Revenues	12,15%	12,83%	11,52%	11,95%	12,84%
Total Operating Costs and Expenses	**5 099**	**5 016**	**4 897**	**5 262**	**6 063**

Costs/Expenses

(in millions)	2015	2016	2017	2018	2019
Cruise Operating Expenses	5 099	5 016	4 897	5 262	6 063
Cruise Selling and administrative expenses	1 087	1 100	1 186	1 269	1 543
Gross Cruise Costs	**6 186**	**6 116**	**6 083**	**6 532**	**7 606**
Less:					
Commissions, Transporation and Other	1 401	1 350	1 363	1 434	1 656
Onboard and Other	553	494	496	537	640
Restructuring Expenses	-	-	-	-	-
Gains (losses) on ship sales and impairments	-	-	-	-	-
Other	-	1,40	-	-	14,53
Net Cruise Costs	**4 232**	**4 274**	**4 224**	**4 560**	**5 296**
Less fuel	796	713	681	711	698
Net Cruise Costs Exluding Fuel	**3 436**	**3 561**	**3 543**	**3 850**	**4 598**

KPI's regarding Expenses

	2015	2016	2017	2018	2019
ALBD's	**77 307 323**	**80 002 092**	**82 302 887**	**83 872 441**	**87 424 190**
Gross Cruise Cost per ALBD	$ 80,02	$ 76,45	$ 73,91	$ 77,88	$ 87,00
% increase (decrease)	-	-4,46%	-3,32%	5,37%	11,72%
Net Cruise Costs per ALBD	$ 54,74	$ 53,42	$ 51,32	$ 54,37	$ 60,57
% increase (decrease)	-	-2,41%	-3,94%	5,95%	11,40%
Net Cruise Costs Excluding Fuel per ALBD	$ 44,45	$ 44,51	$ 43,05	$ 45,90	$ 52,59
% increase (decrease)	-	0,13%	-3,29%	6,64%	14,57%

Key performance indicators analysis: Royal Caribbean Group – 9 Months ended September 30, 2016-2020

NOVA SCHOOL OF BUSINESS & ECONOMICS

Key Performance Indicators - Royal Caribbean Group (2016-2020 - Nine Months Ended September 30)

Highlights

	2016	2017	2018	2019	2020
Passengers Carried (in thousands)	4365	4 371	4 502	4 926	1 261
ALBD's (in thousands)	28 504	27 647	28 242	31 031	8 437
Growth in ALBD's	-	-3,01%	2,15%	9,88%	-72,81%
Occupancy (%)	106,5%	108,9%	109,6%	108,8%	102,6%

Revenues

(in millions)	2016	2017	2018	2019	2020
Passenger Ticket Revenue	4 795	4 893	5 141	6 073	1 487
Passenger Ticket Revenue as % Total Revenue	73%	72%	72%	72%	68%
Onboard and Other Revenue	1 792	1 881	2 020	2 361	688
Onboard and Other Revenue as % Total Revenue	27%	28%	28%	28%	32%
Gross Cruise Revenue	**6 587**	**6 773**	**7 162**	**8 433**	**2 175**
Less:					
Commissions, transportation and other	1 060	1 060	1 079	1 279	343
Onboard and Other	400	395	413	510	151
Net Passenger Ticket Revenues	3 734	3 833	4 062	4 794	1 144
Net Onboard and Other Revenue	1 392	1 485	1 608	1 850	536
Net Cruise Revenues	**5 127**	**5 318**	**5 670**	**6 644**	**1 681**

KPI's regarding Revenue

	2016	2017	2018	2019	2020
ALBD's / APCD's	**28 504**	**27 647**	**28 242**	**31 031**	**8 437**
Gross Revenue Yields (Gross Yields)	$ 231,09	$ 245,00	$ 253,58	$ 271,77	$ 257,75
% increase (decrease)	-	6,02%	3,50%	7,17%	-5,16%
Net Revenue Yields (Net Yields)	$ 179,86	$ 192,35	$ 200,76	$ 214,11	$ 199,21
% increase (decrease)	-	6,94%	4,37%	6,65%	-6,96%
Net Passenger Ticket Revenue Yields	$ 131,01	$ 138,63	$ 143,83	$ 154,48	$ 135,65
% increase (decrease)	-	5,81%	3,76%	7,40%	-12,19%
Net Onboard and Other Revenue Yield	$ 48,85	$ 53,72	$ 56,92	$ 59,63	$ 63,56
% increase (decrease)	-	9,97%	5,96%	4,76%	6,59%

Operating Costs and Expenses

(in millions)	2016	2017	2018	2019	2020
Commissions, Transportation and Other	1 060	1 060	1 079	1 279	343
Commissions, Transportation and Other as % of Revenu	16,10%	15,65%	15,07%	15,17%	15,76%
Onboard and Other	400	395	413	510	151
Onboard and Other as % of Revenues	6,07%	5,84%	5,76%	6,05%	6,96%
Payroll and Related	672	637	675	799	693
Payroll and Related as % of Revenues	10,20%	9,40%	9,42%	9,48%	31,89%
Fuel	531	509	515	520	327
Fuel as % of Revenue	8,07%	7,51%	7,19%	6,16%	15,05%
Food	372	369	381	436	154
Food as % of Revenye	5,64%	5,45%	5,32%	5,17%	7,10%
Other Ship Operating, Tour and Others	857	780	839	1 037	831
Other Ship Operating, Tour and Others as % of Revenu	13,01%	11,52%	11,71%	12,30%	38,20%
Total Operating Costs and Expenses	**3 892**	**3 751**	**3 902**	**4 581**	**2 500**

Costs/Expenses

(in millions)	2016	2017	2018	2019	2020
Cruise Operating Expenses	3 892	3 751	3 902	4 581	2 500
Cruise Selling and administrative expenses	846	875	943	1 142	944
Gross Cruise Costs	**4 738**	**4 626**	**4 845**	**5 724**	**3 444**
Less:					
Commissions, Transporation and Other	1 060	1 060	1 079	1 279	343
Onboard and Other	400	395	413	510	151
Restructuring Expenses	-	-	-	-	-
Gains (losses) on ship sales and impairme	-	-	-	-	1 355
Other	3		-	12	-
Net Cruise Costs	**3 281**	**3 170**	**3 353**	**3 923**	**1 595**
Less fuel	531	509	515	520	327
Net Cruise Costs Exluding Fuel	**2 750**	**2 661**	**2 838**	**3 403**	**1 268**

KPI's regarding Expenses

	2016	2017	2018	2019	2020
ALBD's	**28 504**	**27 647**	**28 242**	**31 031**	**8 437**
Gross Cruise Cost per ALBD	$ 166,23	$ 167,32	$ 171,54	$ 184,45	$ 408,19
% increase (decrease)	-	0,66%	2,52%	7,53%	121,30%
Net Cruise Costs per ALBD	$ 115,10	$ 114,67	$ 118,72	$ 126,42	$ 189,10
% increase (decrease)	-	-0,37%	3,53%	6,48%	49,59%
Net Cruise Costs Excluding Fuel per ALBD	$ 96,47	$ 96,26	$ 100,48	$ 109,67	$ 150,31
% increase (decrease)	-	-0,22%	4,39%	9,14%	37,06%

Key performance indicators analysis: Norwegian Cruise Line Holdings – Full Year 2015-2019

Key Performance Indicators Analysis - Norwegian Cruise Line Holdings (2015-2019)

Highlights

	2015	2016	2017	2018	2019
Passengers Carried (in thousands)	2 164	2 337	2 519	2 795	2 696
ALBD's (in thousands)	14 701	16 376	17 363	18 842	19 233
Growth in ALBD's	-	11,39%	6,03%	8,51%	2,08%
Occupancy (%)	109,00%	107,40%	106,70%	107,60%	107,30%

Revenues

(in millions)	2015	2016	2017	2018	2019
Passenger Ticket Revenue	3 129	3 389	3 750	4 260	4 517
Passenger Ticket Revenue as % Total Revenue	72,01%	69,53%	69,49%	70,35%	69,90%
Onboard and Other Revenue	1 216	1 485	1 646	1 795	1 945
Onboard and Other Revenue as % Total Revenue	27,99%	30,47%	30,51%	29,65%	30,10%
Gross Cruise Revenue	**4 345**	**4 874**	**5 396**	**6 055**	**6 462**
Less:					
Commissions, transportation and other	765	814	894	999	1121
Onboard and Other	273	299	319	349	395
Net Passenger Ticket Revenues	2 364	2 575	2 856	3 261	3 397
Net Onboard and Other Revenue	943	1 187	1 327	1 447	1 550
Net Cruise Revenues	**3 307**	**3 762**	**4 182**	**4 708**	**4 947**

KPI's regarding Revenue

	2015	2016	2017	2018	2019
ALBD's	**14 700 990**	**16 376 063**	**17 363 422**	**18 841 678**	**19 233 459**
Gross Revenue Yields	$ 295,56	$ 297,65	$ 310,78	$ 321,37	$ 336,00
% increase (decrease)	-	0,71%	4,41%	3,41%	4,55%
Net Revenue Yields	$ 224,95	$ 229,72	$ 240,88	$ 249,85	$ 257,20
% increase (decrease)	-	2,12%	4,86%	3,72%	2,94%
Net Passenger Ticket Revenue Yields	$ 160,79	$ 157,27	$ 164,46	$ 173,07	$ 176,59
% increase (decrease)	-	-2,19%	4,58%	5,23%	2,04%
Net Onboard and Other Revenue Yield	$ 64,16	$ 72,45	$ 76,42	$ 76,78	$ 80,60
% increase (decrease)	-	12,93%	5,47%	0,48%	4,98%

Operating Costs and Expenses

(in millions)	2015	2016	2017	2018	2019
Commissions, Transportation and Other	765	814	894	999	1 121
Commissions, Transportation and Other as % of Revenues	17,61%	16,69%	16,57%	16,50%	17,34%
Onboard and Other	273	299	319	349	395
Onboard and Other as % of Revenues	6,28%	6,13%	5,92%	5,76%	6,11%
Payroll and Related	666	746	804	882	924
Payroll and Related as % of Revenues	15%	15%	15%	15%	14%
Fuel	359	335	361	393	410
Fuel as % of Revenue	8,25%	6,88%	6,69%	6,49%	6,34%
Food	180	200	198	216	223
Food as % of Revenye	4,13%	4,10%	3,68%	3,57%	3,44%
Other Ship Operating, Tour and Others	413	456	487	539	591
Other Ship Operating, Tour and Others as % of Revenues	9,50%	9,36%	9,02%	8,90%	9,15%
Total Operating Costs and Expenses	**2 655**	**2 850**	**3 064**	**3 377**	**3 663**

Costs/Expenses

(in millions)	2015	2016	2017	2018	2019
Cruise Operating Expenses	2 655	2 850	3 064	3 377	3 663
Cruise Selling and administrative expenses	555	666	774	898	975
Gross Cruise Costs	**3 210**	**3 516**	**3 837**	**4 275**	**4 638**
Less:					
Commissions, Transporation and Other	765	814	894	999	1 121
Onboard and Other	273	299	319	349	395
Restructuring Expenses	-	-	-	-	-
Gains (losses) on ship sales and impairments	-	-	-	-	-
Other	-	-	-	-	-
Net Cruise Costs	**2 172**	**2 404**	**2 624**	**2 927**	**3 123**
Less fuel	359	335	361	393	410
Net Cruise Costs Exluding Fuel	**1 814**	**2 069**	**2 263**	**2 535**	**2 713**
Less Non-GAAP Adjustments	60	85	101	118	111
Adjusted Net Cruise Cost Excluding Fuel	**1 754**	**1 983**	**2 162**	**2 417**	**2 602**

KPI's regarding Expenses

	2015	2016	2017	2018	2019
ALBD's	**14 700 990**	**16 376 063**	**17 363 422**	**18 841 678**	**19 233 459**
Gross Cruise Cost per ALBD	$ 218,38	$ 214,73	$ 221,00	$ 226,89	$ 241,15
% increase (decrease)	-	-1,67%	2,92%	2,66%	6,28%
Net Cruise Costs per ALBD	$ 147,77	$ 146,80	$ 151,11	$ 155,37	$ 162,35
% increase (decrease)	-	-0,66%	2,94%	2,82%	4,49%
Net Cruise Costs Excluding Fuel per ALBD	$ 123,37	$ 126,33	$ 130,31	$ 134,53	$ 141,05
% increase (decrease)	-	2,40%	3,15%	3,23%	4,85%
Adjusted Net Cruise Cost Excluding Fuel per ALBD	$ 119,30	$ 121,11	$ 124,52	$ 128,28	$ 135,30
% increase (decrease)	-	1,52%	2,81%	3,03%	5,46%

Key performance indicators analysis: Norwegian Cruise Line Holdings – 9 Months ended September 30, 2016-2020

NOVA SCHOOL OF BUSINESS & ECONOMICS

Key Performance Indicators -Norwegian Cruise Line Holdings (2016-2020 - Nine Months Ended September 30)					
Highlights					
	2016	**2017**	**2018**	**2019**	**2020**
Passengers Carried (in thousands)	1 762	1 756	2 129	2 055	500
ALBD's (in thousands)	12175	12 811	13 958	14 198	4 124
Growth in ALBD's	-	5,22%	8,95%	1,72%	-70,95%
Occupancy (%)	108,4%	107,9%	108,7%	108,3%	103,8%

Revenues					
(in millions)	**2016**	**2017**	**2018**	**2019**	**2020**
Passenger Ticket Revenue	2 630	2 917	3 301	3 526	859
Passenger Ticket Revenue as % Total Revenue	70%	70%	71%	71%	68%
Onboard and Other Revenue	1 119	1 230	1 373	1 455	411
Onboard and Other Revenue as % Total Revenue	30%	30%	29%	29%	32%
Gross Cruise Revenue	**3 749**	**4 147**	**4 674**	**4 982**	**1 270**
Less:					
Commissions, transportation and other	618	684	770	858	371
Onboard and Other	230	250	281	309	83
Net Passenger Ticket Revenues	2 012	2 233	2 532	2 669	488
Net Onboard and Other Revenue	888	980	1 091	1 146	328
Net Cruise Revenues	**2 900**	**3 213**	**3 623**	**3 814**	**816**

KPI's regarding Revenue					
	2016	**2017**	**2018**	**2019**	**2020**
ALBD's / APCD's	**12 175**	**12 811**	**13 958**	**14 198**	**4 124**
Gross Revenue Yields (Gross Yields)	$ 307,94	$ 323,67	$ 334,85	$ 350,88	$ 308,04
% increase (decrease)	-	5,11%	3,45%	4,79%	-12,21%
Net Revenue Yields (Net Yields)	$ 238,22	$ 250,78	$ 259,57	$ 268,66	$ 197,98
% increase (decrease)	-	5,27%	3,51%	3,50%	-26,31%
Net Passenger Ticket Revenue Yields	$ 165,25	$ 174,31	$ 181,38	$ 187,96	$ 118,41
% increase (decrease)	-	5,48%	4,06%	3,62%	-37,00%
Net Onboard and Other Revenue Yield	$ 72,97	$ 76,47	$ 78,18	$ 80,70	$ 79,57
% increase (decrease)	-	4,80%	2,25%	3,22%	-1,40%

Operating Costs and Expenses					
(in millions)	**2016**	**2017**	**2018**	**2019**	**2020**
Commissions, Transportation and Other	618	684	770	858	371
Commissions, Transportation and Other as % of Revenues	16,50%	16,49%	16,47%	17,22%	29,21%
Onboard and Other	230	250	281	309	83
Onboard and Other as % of Revenues	6,15%	6,04%	6,02%	6,21%	6,53%
Payroll and Related	555	594	657	688	441
Payroll and Related as % of Revenues	14,80%	14,31%	14,05%	13,82%	34,75%
Fuel	249	267	288	298	222
Fuel as % of Revenue	6,63%	6,43%	6,17%	5,98%	17,49%
Food	152	147	161	166	60
Food as % of Revenye	4,05%	3,55%	3,44%	3,34%	4,69%
Other Ship Operating, Tour and Others	351	369	403	456	309
Other Ship Operating, Tour and Others as % of Revenues	9,37%	8,89%	8,62%	9,16%	24,31%
Total Operating Costs and Expenses	**2 155**	**2 310**	**2 560**	**2 776**	**1 486**

Costs/Expenses					
(in millions)	**2016**	**2017**	**2018**	**2019**	**2020**
Cruise Operating Expenses	2 155	2 310	2 560	2 776	1 486
Cruise Selling and administrative expenses	505	588	689	745	559
Gross Cruise Costs	**2 660**	**2 898**	**3 249**	**3 521**	**2 045**
Less:					
Commissions, Transporation and Other	618	684	770	858	371
Onboard and Other	230	250	281	309	83
Restructuring Expenses	-	-	-	-	-
Gains (losses) on ship sales and impairments	-	-	-	-	-
Other	-60,86 -	72 -	91 -	91	83,01
Net Cruise Costs	**1 750**	**1 892**	**2 107**	**2 263**	**1 508**
Less fuel	249	267	288	298	222
Net Cruise Costs Exluding Fuel	**1 502**	**1 625**	**1 819**	**1 965**	**1 286**

KPI's regarding Expenses					
	2016	**2017**	**2018**	**2019**	**2020**
ALBD's	**12 175**	**12 811**	**13 958**	**14 198**	**4 124**
Gross Cruise Cost per ALBD	$ 218,46	$ 226,22	$ 232,75	$ 247,98	$ 495,86
% increase (decrease)	-	3,55%	2,89%	6,54%	99,96%
Net Cruise Costs per ALBD	$ 143,74	$ 147,69	$ 150,97	$ 159,37	$ 365,66
% increase (decrease)	-	2,75%	2,22%	5,57%	129,44%
Net Cruise Costs Excluding Fuel per ALBD	$ 123,33	$ 126,87	$ 130,32	$ 138,40	$ 311,77
% increase (decrease)	-	2,87%	2,72%	6,21%	125,26%

Key performance indicators analysis: MSC Cruises– Full Year 2015-2019

Key Performance Indicators Analysis - MSC Cruises (2015-2019)

Highlights	2015	2016	2017	2018	2019
Number of Ships	12	12	14	15	17
Passengers Carried (in thousands)	1 646	1 816	1 980	2 368	2 751
ALBD's (in thousands)	10 901	11 415	12 357	15 199	17 380
Growth in ALBD's	-	4,72%	8,26%	22,99%	14,35%
Occupancy (%)	111,20%	111,20%	111,00%	111,60%	112,30%

Revenues

(in millions)	2015	2016	2017	2018	2019
Passenger Ticket Revenue	1 345	1 458	1 706	2 061	2 401
Passenger Ticket Revenue as % Total Revenue	74,60%	75,46%	75,59%	74,92%	74,29%
Onboard and Other Revenue	458	474	551	690	831
Onboard and Other Revenue as % Total Revenue	25,40%	24,54%	24,41%	25,08%	25,71%
Gross Cruise Revenue	**1 803**	**1 932**	**2 257**	**2 751**	**3 232**
Less:					
Commissions, transportation and other	291	329	410	497	535
Onboard and Other	146	158	187	234	282
Net Passenger Ticket Revenues	1 054	1 129	1 296	1 564	1 866
Net Onboard and Other Revenue	312	316	364	456	549
Net Cruise Revenues	**1 366**	**1 445**	**1 660**	**2 020**	**2 415**

KPI's regarding Revenue

	2015	2016	2017	2018	2019
ALBD's	**10 900 572**	**11 414 872**	**12 357 222**	**15 198 506**	**17 379 840**
Gross Revenue Yields	$ 165,40	$ 169,24	$ 182,63	$ 181,00	$ 185,96
% increase (decrease)	-	2,32%	7,91%	-0,89%	2,74%
Net Revenue Yields	$ 125,31	$ 126,56	$ 134,31	$ 132,91	$ 138,95
% increase (decrease)	-	1,00%	6,12%	-1,04%	4,55%
Net Passenger Ticket Revenue Yield	$ 96,69	$ 98,90	$ 104,86	$ 102,90	$ 107,37
% increase (decrease)	-	2,28%	6,02%	-1,86%	4,33%
Net Onboard and Other Revenue Yield	$ 28,62	$ 27,66	$ 29,45	$ 30,00	$ 31,59
% increase (decrease)	-	-3,36%	6,46%	1,88%	5,28%

Operating Costs and Expenses

(in millions)	2015	2016	2017	2018	2019
Commissions, Transportation and Other	291	329	410	497	535
Commissions, Transportation and Other as % of Revenues	16,12%	17,03%	18,17%	18,06%	16,54%
Onboard and Other	146	158	187	234	282
Onboard and Other as % of Revenues	8,10%	8,19%	8,29%	8,50%	8,72%
Payroll and Related	258	267	292	352	426
Payroll and Related as % of Revenues	14%	14%	13%	13%	13%
Fuel	141	134	160	196	243
Fuel as % of Revenue	7,82%	6,92%	7,09%	7,13%	7,53%
Food	80	85	96	123	148
Food as % of Revenye	4,45%	4,39%	4,26%	4,48%	4,58%
Other Ship Operating, Tour and Others	278	267	289	292	349
Other Ship Operating, Tour and Others as % of Revenues	15,44%	13,80%	12,79%	10,60%	10,81%
Total Operating Costs and Expenses	**1 195**	**1 239**	**1 434**	**1 694**	**1 983**

Costs/Expenses

(in millions)	2015	2016	2017	2018	2019
Cruise Operating Expenses	1 194	1 223	1 416	1 693	1 983
Cruise Selling and administrative expenses	212	239	281	321	392
Gross Cruise Costs	**1 406**	**1 462**	**1 697**	**2 014**	**2 375**
Less:					
Commissions, Transportation and Other	291	329	410	497	535
Onboard and Other	146	158	187	234	282
Restructuring Expenses	-	-	-	-	-
Gains (losses) on ship sales and impairments	-	-	-	-	-
Other	-	-	-	-	-
Net Cruise Costs	**969**	**975**	**1 100**	**1 283**	**1 558**
Less fuel	141	134	160	196	243
Net Cruise Costs Exluding Fuel	**828**	**841**	**940**	**1 087**	**1 315**
Less Non-GAAP Adjustments	-	-	-	-	-
Adjusted Net Cruise Cost Excluding Fuel	**828**	**841**	**940**	**1 087**	**1 315**

KPI's regarding Expenses

	2015	2016	2017	2018	2019
ALBD's	**10 900 572**	**11 414 872**	**12 357 222**	**15 198 506**	**17 379 840**
Gross Cruise Cost per ALBD	$ 128,98	$ 128,08	$ 137,33	$ 132,51	$ 136,65
% increase (decrease)	-	-0,70%	7,22%	-3,51%	3,12%
Net Cruise Costs per ALBD	$ 88,89	$ 85,41	$ 89,02	$ 84,42	$ 89,64
% increase (decrease)	-	-3,91%	4,22%	-5,17%	6,19%
Net Cruise Costs Excluding Fuel per ALBD	$ 75,96	$ 73,68	$ 76,07	$ 71,52	$ 75,66
% increase (decrease)	-	-3,01%	3,25%	-5,98%	5,79%
Adjusted Net Cruise Cost Excluding Fuel per ALBD	$ 75,96	$ 73,68	$ 76,07	$ 71,52	$ 75,66
% increase (decrease)	-	-3,01%	3,25%	-5,98%	5,79%