THE GEOGRAPHY OF CRUISE SHIPPING: CARIBBEAN AND MEDITERRANEAN ITINERARIES, CAPACITY DEPLOYMENT AND PORTS OF CALL

JEAN-PAUL RODRIGUE
Department of Global Studies & Geography,
Hofstra University, Hempstead, New York 11549, USA
E-mail: jean-paul.rodrigue@hofstra.edu

THEO NOTTEBOOM
Institute of Transport & Maritime Management Antwerp (ITMMA),
University of Antwerp, Kipdorp 59, B-2000 Antwerp, Belgium
And
Antwerp Maritime Academy
E-mail: theo.notteboom@ua.ac.be

ABSTRACT

In the past decades, the cruise industry developed into a mass market using large vessels and adding more revenue-generating passenger services onboard. It is a highly concentrated business both in terms of players (i.e. four players accounting for 96% of the market) and markets (i.e. Caribbean and Mediterranean are the key markets). Under such circumstances vessel deployment strategies and itinerary design by cruise operators are primordial and are affected by market circumstances and requirements and by pure operational considerations.

This paper focuses on capacity deployment and itineraries in two major cruise markets: the Caribbean and the Mediterranean through an analysis of itineraries and ship deployment. We argue that the cruise industry sells itineraries, not destinations, implying a greater flexibility in the selection of ports of call. The paper also reveals that the two cruise markets are not functioning independently but are interconnected in an operational manner, particularly through the repositioning of vessel units to cope with variations in seasonal demand among the geographical markets. Next to analyzing itineraries and capacity deployment strategies, the paper proposes a classification of cruise ports based on the role they serve within their regions.

Key Words: cruise shipping, cruise ports, vessel deployment
1. INTRODUCTION

The modern cruise industry emerged in the late 1960s and soon developed into a mass market using large vessels and adding more revenue-generating passenger services onboard. For a long time, the cruise industry was an under-researched academic field in maritime economics and geography. In the last two decades, the cruise industry has attracted researchers from various fields investigating the operational and commercial dynamics and complexities behind this growing segment in shipping. Dowling (2006) probably offers the most comprehensive overview of academic work related to cruise shipping: the edited volume covers nearly forty contributions dealing with topics such as the geography and seasonality of the world cruise market (Charlier and McCalla, 2006), the industrial organization of cruise shipping (Papatheodorou, 2006), the demand for cruise tourism (see e.g. Petrick and Li, 2006), the supply of cruise shipping in specific regions (see e.g. Wilkinson, 2006 and Wood, 2000 on the Caribbean) and other economic, social and environmental dimensions of the cruise market.

Dwyer and Forsyth (1996; 1998) and Dwyer et al. (2004) analyzed the economic significance of cruise tourism and cruise ship calls, while Douglas and Douglas (2004) unravel cruise ship passenger spending patterns. Key operational research topics include the optimal routing of cruise ships (see e.g. Hersh and Ladany, 1989), the cruise ship port selection process (Marti, 1990) and the optimal cruise-liner passenger cabin pricing policy (Ladany and Arbel, 1991). The service offerings and locational qualities of cruise ports have also received attention in literature. For example, McCalla (1998) examined the specific site and situation requirements of cruise ports, while Vagellas and Pallis (2010) identified and classified the different services provided by 20 European passenger ports. Gui and Russo (2011) introduced an analytic framework that connects the global structure of cruise value chains to the regional articulation of land-based cruise services.

Building further upon existing literature, this paper focuses on capacity deployment and itineraries in two major cruise markets: the Caribbean and the Mediterranean. We argue that the cruise industry sells itineraries, not destinations, implying a greater flexibility in the selection of ports of call. The paper also reveals that the two cruise markets are not functioning independently but are interconnected in an operational manner, particularly through the repositioning of vessel units to cope with variations in seasonal demand among the geographical markets. Next to analyzing itineraries and capacity deployment strategies, the paper proposes a classification of cruise ports based on the role they serve within their regions.

The paper is structured as follows. In the first two parts we discuss the growth of the cruise industry and present key characteristics and recent developments in the cruise business. The third part provides a conceptual framework on ship scheduling by incorporating the specific realities in the cruise business, and offers an analysis of existing itineraries in the Caribbean and the Mediterranean cruise markets, the inter-linkages between these markets (e.g. ship repositioning) and port of call considerations. We conclude the paper by highlighting the specific nature of ship scheduling and itinerary design in cruise shipping. We also present avenues for further research in this under-researched field of maritime economics and geography.
2. THE ORIGINS AND GROWTH OF CRUISE SHIPPING

2.1. The era of the trans-Atlantic liners

From the mid-19th century liner services supported long distance passenger transportation between continents, particularly between Europe and North America. The need to accommodate a large number of passengers of different socioeconomic status for at least a week led to the emergence of specific ship designs radically different from cargo ships where speed and comfort (at least for the elite) were paramount. The emergence of the cruise industry can be traced to the demise of the ocean liner in the 1960s as it was replaced by fast jet services for which it could not compete. The last liners became the first cruise ships as it took more than a decade to see the complete demise of liner services with the final realization that long distance travel was now to be assumed by air transport and also considering the 30 years lifespan of a liner. The availability of a fleet of liners which utility was no longer commercially justifiable incited their reconversion to form the first fleet of cruise ships.

For instance, one of the last purposely designed liners, the SS France, operating between 1961 and 1974, was mainly used for the conventional transatlantic service between Le Havre and New York. With rising oil prices and more efficient jet liners, including the Boeing 747 (introduced in 1970), the liner was no longer able to effectively compete over the transatlantic route. While a jet plane could link Paris or London to New York in about 8 hours, it took about 4 days for a liner to cross the Atlantic, excluding a train segment between London and Southampton (or Paris and Le Havre). Considering one round trip per day, a 747 could carry about 3,200 passengers across the Atlantic in the time it took the SS France to carry 2,000 passengers on a single journey. Unable to generate enough revenue to justify its operating costs the SS France was mothballed in 1974 and purchased by the Norwegian Cruise Line (renamed the SS Norway). Its final commercial years between 1980 and 2003 were spent as a cruise ship. However, liners were not particularly suitable to the requirements of the emerging cruise industry. For instance, since many liners were designed to operate on the North Atlantic throughout the year for scheduled passenger services, their outdoor amenities such as boardwalks and swimming pools were limited. Additionally, they were built for speed (which was their trademark) with the related high levels of fuel consumption.

2.2. The emergence and massification of the modern cruise industry

The emergence of the modern cruise industry began in the late 1960s and early 1970s with the founding of Norwegian Cruise Line (1966), Royal Caribbean International (1968) and Carnival Cruise Lines (1972), which have remained the largest cruise lines. The early goal of the cruise industry was to develop a mass market since cruising was until then an activity for the elite. A way to achieve this was through economies of scale as larger ships are able to accommodate more customers as well as creating additional opportunities for onboard sources of revenue. The first dedicated cruise ships began to appear in the 1970s and could carry about 1,000 passengers. By the 1980s, economies of scale were further expanded with cruise ships that could carry more than 2,000 passengers. The current large cruise ships have a capacity of about 6,000 passengers. The market for the cruise industry was by then established and recognized as a full-fledged touristic alternative directly competing with well-known resorts areas such as Las Vegas or Orlando.
In the past decades, the cruise industry developed into a mass market using large vessels and adding more revenue-generating passenger services onboard. The Caribbean remains the key market, but its dominance is being slowly eroded by the Mediterranean market which offers a complementarity with its winter focused season. Furthermore, strong niche markets have developed focusing on, for instance, history (Hanseatic cities in northern Europe) or natural amenities (Alaska). Since the cruise industry is a relatively small segment of the touristic sector, it has so far been very successful at finding customers to fill a greater number of ever larger ships. The cruise product has become diversified to attract new customers and to respond to a wide array of customer groups. In view of fulfilling the desires of its guests, the cruise industry has innovated through the development of new destinations, new ship designs, new and diverse onboard amenities, facilities and services, plus wide-ranging shore side activities. Most cruise ship operators work around specific cruise themes and voyage lengths can vary to meet the changing vacation patterns of customers. The rising affluence and ageing of the global population, the growing popularity of exotic and resort destinations and a growing diversity in the touristic sector have all contributed to the success of cruise shipping.

3. MARKET DYNAMICS IN CRUISE SHIPPING

3.1. A growing customer base

The global cruise industry carried about 19.1 million passengers in 2011, up from 7.2 million in 2000 (Cruise Lines International Association, 2011). Since 1990, over 154 million passengers have taken a 2+ day cruise. Of this number, over 68% of the total passengers have been generated in the past 10 years and nearly 40% in the past 5 years. The global growth rate of the cruise industry has been enduring and stable, at around 7% per year in spite of economic cycles of growth and recession. For instance, the financial crisis of 2008–2009 has not impacted the demand for cruises. FCCA (2010) reported that the annual occupancy percentage even exceeded 104% in 2009 showing an industry where demand continues to outstrip supply, even in the harshest economic environments. This underlines that the industry has been so far fundamentally supply based: the ships are built and the customers are found to fill them through various marketing and discounting strategies.

The possibility for cruise ship operators to successfully follow a supply push strategy makes the cruise industry quite different from other shipping markets, such as container shipping. Hence, in most shipping markets the shipping activity is a clear derived activity of trade and demand is rather price inelastic. As mentioned earlier, demand in the cruise business is ‘created’ through pricing and branding/marketing. Cruise operators are challenged to develop competitive cruise packages which involve a high-quality stay onboard, an array of shore-based activities offering access to a variety of cultures and sites and easy transfers to/from the vessel.

The construction of cruise ships tends to take place in cycles where several ships are ordered and enter the market within a short time frame. Since the cruise industry is a relatively small segment of the touristic sector, it has so far been very successful at finding customers to fill ever larger ships. Its highest level of market penetration is in North America with about 3% of the population taking a cruise each year (Figure 1). This
includes people who may take more than one cruise in a year so actual figures are actually lower.

![Bar chart showing cruise source markets, 2010](image)

The dominant source market for cruise shipping remains North America with a penetration level of around 3%, but there is a gradually changing customer base towards developing countries, particularly Latin America. Countries that have a maritime tradition tend to have a higher share of the population taking cruises. Penetration levels in Asia remain problematic (0.1 to 0.2%) as a cruise is generally not perceived to be an accepted mean of vacationing. Still some initiatives are being developed such as the plan of Princess Cruises to deploy the Sun Princess with a capacity of about 2,000 passengers in Japan starting in April 2013 and targeted specifically at Japanese vacationers. The company expects to carry about 18,000 passengers on the Japan-based cruises.

### 3.2. Market drivers

The market drivers of the cruise industry are similar to those that have fostered the growth of tourism after World War II, particularly the rising affluence of the global population and the growing popularity of exotic and resort destinations. The general aging of the population is also a factor in favor of cruise shipping as the main market remains older adults, albeit customers are getting significantly younger. While in 1995 the average age of a cruiser was about 65 years, this figure dropped to 45 years by 2006 (Cruise Lines International Association, 2011).

Cruisers have a specific profile (FCCA, 2010). They often cruise as part of their vacation mix and plan their cruise trip on average 5 to 6 months in advance. Word of mouth referrals are important in choosing a cruise trip, next to more common sources such as cruise websites and travel agents. About three-quarters of all cruise passengers book at least some of their cruises through travel agents.
What is novel with cruising is that the ship represents in itself the destination, essentially acting as a floating hotel (or a theme park) with all the related facilities (bars, restaurants, theaters, casinos, swimming pools, etc.). This permitted cruise lines to develop a captive market within their ships as well as for shore-based activities (e.g., excursions or facilities entirely owned by subsidiaries of the cruise line). Some cruise operators go very far in developing new entertainment concepts on board of their vessels, including surf pools, planetariums, on-deck LED movie screens, golf simulators, water parks, demonstration kitchens, multi-room villas with private pools and in-suite Jacuzzis, ice-skating rinks, rock-climbing walls, bungee trampolines and other. Onboard services typically account between 20 and 30% of the total cruise line revenues. The average customer spends about $1,700 for their cruise, including ship and off-ship expenses for goods and services. The majority of these expenses are captured within the cruise ship as passengers spend on average $100 per port of call.

3.3. Market size and seasonality

The Caribbean has been the dominant deployment market of the cruise industry since its inception, but the Mediterranean cruise market has grown substantially in recent years (Figure 2). Both markets offer a variety of cultures in close proximity and are thus ideality suited. Furthermore, strong niche markets have developed focusing on, for instance, history (Hanseatic cities in northern Europe) or natural amenities (Alaska).

The Caribbean and the Mediterranean are regional and complementary markets accounting for more than 70% of the global capacity of the cruising industry (measured in bed-days). They are complementary in the sense that the Caribbean is dominantly serviced during the winter while the Mediterranean experiences a summer peak season (Figure 3). Seasonality thus plays a key role in the cruise industry (Charlier and McCalla, 2006; Charlier, 1999). The monthly deployment of cruise ship capacity underlines a substantial seasonality. The Caribbean is the main winter market while the Mediterranean is the dominant summer market. Still, they are both perennial markets since they are serviced year-round. Alaska and the Northeast Atlantic (New England) are examples of strictly seasonal markets that are only serviced during summer months.

![Figure 2 - Deployment of the Global Cruise Fleet, 2011](source: adapted from Cruise Lines International Association (CLIA)).
3.4. Ownership structure

The cruise industry has a very high level of ownership concentration, since the four largest cruise shipping companies account for 96% of the market (Carnival Lines, Royal Caribbean, Norwegian Cruise Line and MSC Cruises). High levels of horizontal integration are also observed since most cruise companies have acquired parent companies but kept their individual names for the purpose of product differentiation. For instance, Royal Caribbean Cruises, which is the world’s second largest cruise company behind Carnival Lines, accounts for 24% of the global market serviced under 6 different brands such as Celebrity Cruises (which caters to higher end customers) and Azamara Club Cruises (smaller ships servicing more exotic destinations with shore stay options).

Cruise shipping is increasingly capital intensive as each new cruise ship class comes with better amenities. A ship of the latest Oasis class, which is able to carry more than 6,000 passengers, costs about 1.2 billion dollars and can take 4 years to be delivered. Larger ships command higher booking prices since they offer more amenities, but current trends indicate that the cruise industry has no ships larger than the Oasis class in its order books. Optimal economies of scale may have been reached.
4. NETWORK CONFIGURATION AND PORTS OF CALL IN THE CRUISE SHIPPING INDUSTRY

4.1. Itineraries, not destinations

The cruise industry sells itineraries, not destinations, implying a greater flexibility in the selection of ports of call. Cruise operators are challenged to develop competitive cruise packages but at the same time they have to optimize the deployment of their cruise ship fleet in view of minimizing operating costs and/or maximizing revenue per passenger slot. As such, vessel deployment strategies and itinerary design are affected by market circumstances and requirements such as the seasonality in demand, the optimal duration of a cruise vacation, the balance between sailing time and shore time, the existence of ‘must see’ destinations and overall guest satisfaction. At the same time, pure operational considerations are taken into account such as the berthing capacity and nautical accessibility in ports, the distance between ports of call (cruise ships can cover 200 nautical miles per night) and the synchronization with (international) air transfers.

Before a cruise ship operator can start with the actual design of a cruise service itinerary, the targeted market must be analyzed. The analysis should include elements related to the supply and demand of the targeted cruise shipping region. Key considerations on the supply side include vessel capacity deployment and utilization by competing cruise ship operators, vessel size distribution, the configuration of existing cruise services, the existing market structure (how many players, and who is offering which itineraries) and the port call patterns of existing cruise services. On the demand side, cruise ship operators typically focus on disposable incomes and the demographics of the customer base, potential revenue generation, seasonality, brand positioning (exotic ports of call for premium services) and guest satisfaction (customer oriented industry). The ultimate goal of the market analysis is not only to see whether demand for a new cruise service can indeed be ‘created’, but also to estimate the volatility and seasonality of such demand. These factors will eventually affect the earning potential of the new service.

Once the market potential for a new service has been determined, the service planners need to take decisions on several inter-related core design variables. A standard cruise itinerary is a loop beginning and ending at a hub port (also called a turn port) and typically lasting 7 days with 3 to 5 ports of call depending on their respective proximity. So the design variables mainly concern the number and order of port calls, the synchronization with the (international) air transfers at the turn ports, vessel speed and vessel size.

Cruise ships tend to have a low draft since they do not carry cargo; they are more volume than weight. This confers the advantage of being able to access a large number of ports and therefore multiplying itinerary options since the setting of a pure cruise port leans on criteria that are different from commercial ports. Cruise ports tend to be located close to either city centers (cultural and commercial amenities) or to natural amenities (e.g. a protected beach). These sites do not have on average very deep drafts and dredging would be socially or environmentally unacceptable. For instance, ships of the Oasis class, which as of 2011 accounted for the largest cruise ship class, have a draft of 31 feet. Comparatively, a containership of 2,500 TEU requires a draft of 33 feet, while a sovereign class containership of 8,400 TEU requires a draft of 46 feet. Draft issues that have plagued container ports are a much more marginal issue for cruise shipping. Additionally, cruise ships have the option to anchor and use tendering services. Adding port calls can generate
additional revenue (through a higher willingness to pay for the customer) if these additional ports of call offer exceptional value in terms of historical setting or scenery. Santorini in Greece is a typical example of a ‘must’ cruise port of call in the Aegean Sea.

In container shipping slow steaming has become quite common on the main trade routes due to high bunker prices (see Notteboom and Vernimmen, 2009) and the capacity situation in the market (i.e. slow steaming can absorb some of the vessel overcapacity in the market, see e.g. Cariou and Notteboom, 2011). In cruise shipping, the choice of vessel speed is far less affected by bunker costs and capacity considerations, but mainly guided by the targeted round voyage time. Environmental considerations play a role, particularly when calling at ports.

The number and order of port calls, the total two-way sailing distance and the vessel speed are the main determinants of the total vessel roundtrip time. When delays along the route and in ports give rise to schedule reliability problems, cruise ship operators often decide to catch up lost time by increasing the sailing speed at night. Schedule reliability is of utmost importance to cruise passengers, particularly when a tight synchronization exists between their arrival at the hub port and the departure of their international flights. Cruise ship operators can insert time buffers in the cruise liner service to reduce the risks of delays.

Based on the above considerations, three main types of itineraries can be found:

• **Perennial.** The region covered by the itinerary is serviced throughout the year as the demand remains resilient, which is associated with stable (subtropical) weather conditions as well as stable itineraries. There may be significant seasonal variations in the number of ships deployed but the market remains serviced throughout the year. The Caribbean is the foremost perennial cruise market (summer low season), but the Mediterranean is also serviced year-round with a winter low season.

• **Seasonal.** Weather is the dominant factor explaining seasonality, implying that some regions have a market potential only during a specific period or season. This is particularly the case for Baltic, Norwegian, Alaskan and New England cruises that are serviced during summer months. Inversely, South American and Australian itineraries are serviced during the winter months.

• **Repositioning.** Because of the seasonality of the cruise industry the repositioning of ships between seasons is required. Cruise companies are increasingly using this opportunity to offer customers lower cost cruises for the inconvenience of having to book air travel arrangements for the return trip since the beginning and ending ports of call are not the same. This mainly takes place across the Atlantic as ships move from the winter Caribbean peak season to the summer Mediterranean peak season (and vice-versa). The beginning and the end of the Alaska season are also combined with a Hawaiian cruise as ships get repositioned. Barcelona and Dubai are emerging repositioning hubs since the Mediterranean and the Indian Ocean are growing faster than the conventional Caribbean market. For example, in the northern hemisphere Winter of 2011 Royal Caribbean Cruises deployed its 42 ships as follows: 23 ships in the Caribbean, 3 ships in the Mediterranean, 9 ships in South America, 4 ships in Asia/Australia, and the remainder in other smaller markets. In the Summer of 2011, only 8 ships were deployed in the Caribbean while an elevated 21 vessels sailed in the Med, 5 ships in Alaska, 4 ships in the Baltic and the remainder in other markets (Tercek, 2011).
4.2. Stability vs. variation in the itineraries of a cruise vessel

The container shipping industry is characterized by regular container services whereby a ship is deployed for a long time (several months up to years) in the same loop with the same ports of call. A certain number of vessels are required to maintain the desired frequency at each port of call (on mainline routes one call per week is the standard). For example, on the North Europe-Far East trade 9 to 11 vessels are required to maintain a fixed schedule of one call per week per port of call with each liner service typically calling at between 8 and 12 ports of call in Europe and Asia (Notteboom and Vernimmen, 2009).

The cruise industry generally follows a more differentiated concept when deploying ships on specific routes or itineraries. Large differences can be observed between smaller niche product vessels and the very large cruise vessels.

Tables 1 and 2 provide an example of the deployment of the Silver Wind and the Silver Cloud, two vessels of Silversea Cruises, during one year from April 2012 to April 2013. Both vessels are rather compact cruise vessels with a length overall of 157m and a beam of 21.5m. They can accommodate only 296 guests in very luxurious conditions. An analysis of the data contained in both tables lead to two conclusions. First, the focus is on the deployment of one single ship by connecting a series of individual cruises, each with a round voyage time of between 7 and 18 days. Second, a single cruise ship is rarely ever deployed on the same rotation for more than one cruise. There are few exceptions in this example: during the winter season in the northern hemisphere the Silver Wind consecutively performs three of the same cruise rotations in Southern Africa before heading back north, and the Silver Cloud makes a few of the same cruises in the Caribbean and South America. In general, both ships continuously change rotation by moving from one region to another depending on weather conditions and peak season considerations. Thus, not only rotations change but also the continents where these rotations take place. The examples demonstrate how these cruise ships are repositioned over long distances through repositioning cruises.

The flexible routing of the Silversea Cruises ships is in sharp contrast with the practices for the deployment of many much larger cruise vessels. Table 3 provides an example of the deployment of the Freedom of the Seas and the Allure of the Seas, the workhorses of Royal Caribbean Cruises. The ship (LOA of 339m and beam of 39m) has a maximum capacity of 4,370 passengers and operates on only two itineraries (of 7 nights each) in the Caribbean throughout the year. The vessel uses a fixed base port, i.e. Port Canaveral, and is not repositioned to other cruise regions. Also the Allure of the Seas, the largest cruise ship afloat with a maximum capacity of 6,360 passengers (LOA: 360m, beam: 65m), offers only two itineraries in the Caribbean during the year centered on hub port Fort Lauderdale. Another example is the MSC Fantasia with a capacity of 3,900 passengers (LOA of 333m and a beam of 38m): MSC Cruises deploys the vessel on a fixed itinerary of 7 days between Genoa, Naples, Palermo, La Goulette, Barcelona, Marseille and back to Genoa. Passengers can start their cruise in all ports of call, except for La Goulette, since all ports are within the European Union. The MSC Melody, the oldest ship in the fleet of MSC Cruises built in 1982 (1064 passengers, LOA: 205m, beam: 27m) sails between Genoa, Rome (Civitavecchia), Alexandria, Limassol, Katakolon and back to Genoa throughout the season. Also, other ships in the fleet of MSC Cruises are sailing according to one or only a few itineraries throughout the year.
Table 1 – The deployment of the Silver Wind (Silversea Cruises) between April 2012 and April 2013

<table>
<thead>
<tr>
<th>Period</th>
<th>Nights</th>
<th>Ports of call and order of calls</th>
<th>Region</th>
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<tbody>
<tr>
<td>Apr 22-24</td>
<td>7</td>
<td>Rome (Civitavecchia), Santorini, Mykonos, Crete, Athens, Santorini</td>
<td>Med (west)</td>
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<td>Apr 28-30</td>
<td>2</td>
<td>Piraeus, Athos, Thessaloniki</td>
<td>Med (east)</td>
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<td>May 1-3</td>
<td>7</td>
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<td>Med (west)</td>
</tr>
<tr>
<td>May 14-16</td>
<td>12</td>
<td>Piraeus, Athens, Piraeus, Piraeus, Piraeus, Piraeus</td>
<td>Med (west)</td>
</tr>
<tr>
<td>May 21-23</td>
<td>12</td>
<td>Rome (Civitavecchia), Santorini, Mykonos, Crete, Athens, Santorini</td>
<td>Med (west)</td>
</tr>
</tbody>
</table>

Key statistics

- **Key hub ports**: No. of cruises in year 2012

| Average number of nights | 17 |
| Average no. of port calls | 7.6 |
| Index | 1.77 |

Table 2 – The deployment of the Silver Cloud (Silversea Cruises) between May 2012 and May 2013

<table>
<thead>
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<tr>
<td>May 14-16</td>
<td>12</td>
<td>Rome (Civitavecchia), Santorini, Mykonos, Crete, Athens, Santorini</td>
<td>Med (west)</td>
</tr>
<tr>
<td>May 21-23</td>
<td>12</td>
<td>Rome (Civitavecchia), Santorini, Mykonos, Crete, Athens, Santorini</td>
<td>Med (west)</td>
</tr>
</tbody>
</table>

Key statistics

- **Key hub ports**: No. of cruises in year 2013

| Average number of nights | 14.4 |
| Average no. of port calls | 8.17 |
| Index | 3.58 |

11
Table 3 – The deployment of the Freedom of the Seas and the Allure of the Seas (Royal Caribbean Cruises) between April 2012 and April 2013

Freedom of the Seas - Royal Caribbean Cruises

<table>
<thead>
<tr>
<th>Period</th>
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<td>Caribbean</td>
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<td>Caribbean</td>
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<td>May 20-27</td>
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<tr>
<td></td>
<td></td>
<td><strong>same two cruises repeated all year round</strong></td>
<td></td>
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<tr>
<td>Apr 7-14, 2013</td>
<td>7</td>
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<td>Caribbean</td>
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<tr>
<td>Apr 28 to May 5, 2013</td>
<td>7</td>
<td>Port Canaveral - Labadee - Falmouth - Grand Cayman - Cozumel - Port Canaveral</td>
<td>Caribbean</td>
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Allure of the Seas - Royal Caribbean Cruises

<table>
<thead>
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<td>Caribbean</td>
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<tr>
<td>May 13-20</td>
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<td>Port Lauderdale - Nassau - Saint Thomas - Saint Maarten (Phillipsburg) - Fort Lauderdale</td>
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<tr>
<td>May 20-27</td>
<td>7</td>
<td>Port Lauderdale - Labadee - Falmouth - Cozumel - Fort Lauderdale</td>
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<tr>
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<td><strong>same two cruises repeated all year round</strong></td>
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<tr>
<td>Apr 7-14, 2013</td>
<td>7</td>
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<td>Apr 14-21, 2013</td>
<td>7</td>
<td>Port Lauderdale - Nassau - Saint Thomas - Saint Maarten (Phillipsburg) - Fort Lauderdale</td>
<td>Caribbean</td>
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</tbody>
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In summary, the itineraries of larger vessels (mass cruise tourism) tend to be more stable than for smaller niche vessels. However, the stability in the sailing schedule of ships is not only linked to vessel size, but also to the strategies of the cruise operators in terms of cruise offer, branding, targeted customer base, pricing, and cost and technical considerations related to the vessel operations. The schedules are very tight for all ship sizes as the end of one cruise and the start of the next cruise are mostly scheduled on the same day in a specific hub port (arrival in the morning and departure in the afternoon). Such tight schedules challenge the cruise operator to strive for efficient passenger and cabin logistics as well as stores (food and beverages) and leaves no room for schedule integrity problems.

4.2. Caribbean itineraries

The Caribbean is the world's largest cruise shipping market, representing over 40% of the annual cruise supply. Cruise-related expenditures are responsible for 56,000 jobs throughout the Caribbean. These cruise generated jobs paid USD 720 million in wage income to Caribbean residents (FCCA, 2010). The Caribbean acts an ideal cruising destination for the following reasons:

- **Geography.** The Caribbean is mostly a chain of islands in close proximity implying short cruising distances between ports of call. The climate is subtropical with limited temperature fluctuations, albeit the hurricane season (August to October) can create some disruptions. There is a variety of landscapes ranging from rain forests to semi-arid conditions as well as the presence of coral and volcanic islands.

- **Historical and cultural.** The region has a long history associated with European colonialism and accounts for the oldest settlements in the Americas. African, Hispanic, English, French and Dutch influences are prevalent, conferring a very diversified cultural landscape that often changes completely from one island to the other. Therefore, the cruise industry is able to offer to its customers a variety of cultural experiences in close proximity.
- Commercial. Being adjacent to the United States offers a large market of potential tourists able to afford cruise packages without having to travel far to start a cruising itinerary.

Most Caribbean cruises begin (and end) from the Miami / Fort Lauderdale cruise ports cluster that act as the main hub ports (Figure 4). Both are major airports well connected to the rest of the United States. New York is also a significant hub port, but its distance limits its Caribbean ports of call options; Kings Wharf (Bermuda) represents a common port call for New York bound Caribbean itineraries. Itineraries using San Juan, Puerto Rico as a hub port have the advantage of being able to effectively cover the eastern Caribbean, the furthest from the United States.

![Figure 4 - Selected Cruise Itineraries, Caribbean](image)

Source: Itineraries from Royal Caribbean Cruises. Note: Paths are approximate.

The typical itinerary is about 7 nights of duration, which enables to cover a sub-region of the Caribbean comprising of 3 or 4 ports of call. Cruise ships commonly arrive at the port of call early in the morning and leave in the evening, using the night to sail to the next port of call. To take advantage of a location that does not have sufficient infrastructure to accommodate cruise operations, several cruise shipping companies developed private cruise terminals, including related private touristic amenities (beaches, craft markets, restaurants, etc.). A salient example is Labadee in Haiti, which is privately owned by Royal Caribbean Cruises. The facility is an enclave protected by private security forces and acts as a port of call for most of the company's Western Caribbean itineraries.
4.3. Mediterranean itineraries

The Mediterranean is the world's second largest cruise shipping market, representing over 29% of the annual cruise capacity. Its adjacency to Europe provides the advantage of a large pool of customers with discretionary spending. It is a perennial cruise market with a summer peak season (several itineraries are not serviced in the winter). The Mediterranean offers at the same time seaside resort destinations as well as world class cultural amenities as several cities are museums by themselves (e.g. Venice). 7 days itineraries are structured as small loops of 4 to 5 ports of call each covering a specific sub-region such as the Adriatic or the Spanish coast. Since the distances between ports of call are relatively short, this leaves additional time for shore excursions as each port of call offers a wide array of cultural amenities. 14 days itineraries are also being offered covering large parts of the European side of the Mediterranean.

Many of the itineraries are focused on historical sites and exceptional scenery. The most popular countries for cruise ports of call in Europe are Italy, Spain and Greece. Strong growth in Mediterranean cruises in the past years has made that some ports are getting very crowded. This is particularly felt in top cruise tourist destinations such as Santorini in Greece, Venice in Italy and Dubrovnik in Croatia, but also hub ports such as Civitavecchia and Barcelona are challenged to cope with the strong growth of the past years.
4.4. Ports of call

Ships are constantly moving between ports of call and shore leaves are of low duration; 4.3 hours on average in the Caribbean. As mentioned earlier, a standard cruise itinerary is a loop beginning and ending at a hub port and typically lasting 7 days with 3 to 5 ports of call depending on their respective proximity. Cruises of 10 to 21 days are also offered but they tend to have lower profit margins as customers are inclined to spend less as the cruise progresses.

For most customers, a cruise involves two travel segments, the first being air travel to the hub port (with a return trip) and the second is the cruise itself. It is therefore important that the hub port is serviced by a well-connected airport, with significant airlift capacity and which represents in itself a touristic destination. This is the case for Miami, Fort Lauderdale and San Juan that are respectively well connected airports and act as hub ports for Caribbean itineraries. Barcelona and Civitavecchia (near Rome) are major hub ports for the Mediterranean which are well serviced by air transportation. Poorly connected airports are commonly associated with higher airfares, which impair the competitiveness of the city for mass tourism.

There are a number of customer benefits linked to having more cruise embarkation points available such as drive-to convenience (particularly in North America) and fewer airport hassles. More “close to home” ports also increase the likelihood of cruising, the reason why cruise line will call ports along the American Gulf Coast and Eastern Seaboard such as Tampa, Galveston, Baltimore and New Orleans.

Cruise ports come into three main categories depending of the role they serve within their regions (table 4):

- **Destination cruise port.** There are several reasons why the cruise port area can be the sole destination. In the case of cities such as Venice and Barcelona, the cultural amenities been offered are world class to the point that tourists will have little incentives to see anything in the vicinity. Alternatively, in some cases there may be safety and security issues outside the port area, which can be common in developing countries. In the case of the private enclave of Labadee in Haiti, the port area is secured with its own security detail.

- **Gateway cruise port.** Some cruise ports act as technical stops since they offer no significant cultural or physical amenities, but are used because they are servicing a major touristic destination. For instance, the port of Civitavecchia is the gateway to Rome, one of the most visited cities in the world.

- **Balanced cruise port.** Represent an array of cruise ports where the port can be a destination, but excursions are also available. The balance between the gateway and destination functions varies according to what each port and its region has to offer.
Table 4 - Functional Typology of Cruise Ports

<table>
<thead>
<tr>
<th>Destination Cruise Port</th>
<th>Gateway Cruise Port</th>
<th>Balanced Cruise Port</th>
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</thead>
<tbody>
<tr>
<td>The cruise port is the sole destination. Limited, if any, excursions outside port area.</td>
<td>The cruise port is not a destination, but a point of embarkment (turn port). Excursions outside port area.</td>
<td>The cruise port is a destination and a point of transit for excursions.</td>
</tr>
<tr>
<td>High quality cultural or physical amenities. No other significant amenities in proximity. Security and safety issues.</td>
<td>No significant cultural or physical amenities. Port servicing major touristic destination.</td>
<td>Various balances between the amenities offered at the port and in the region.</td>
</tr>
<tr>
<td>Venice, Barcelona, Labadee (Haiti), Cococay (Bahamas)</td>
<td>Civitavecchia, Livorno</td>
<td>Miami, San Juan, Nassau, Piraeus, Lisbon</td>
</tr>
</tbody>
</table>

There has been a growing number of hub ports where passengers in whole and in part can begin or end their journey, so the future of the cruise industry may include more itineraries that are partially undertook by passengers. An emerging trend, where possible, has been the setting of dedicated facilities where the cruise shipping company is directly involved in the development of the cruise terminal as well as co-located amenities. In some instances, private ports of call reserved exclusively for a cruise company have been developed, such as Labadee (Royal Caribbean) in Haiti, Coco Cay (Royal Caribbean), Half Moon Cay (Holland), Castaway Cay (Disney), Princess Cay (Princess) and Great Stirrup Cay (Norwegian) in the Bahamas. These private facilities are all within one cruise day from the home ports of Florida, offering the option of short 3-4 days cruises to a quiet and safe destination. The cruise industry is expanding to provide more options for passengers, particularly for niche markets where higher prices can be commended than in the competitive mass markets of the Caribbean and the Mediterranean. For instance, cruises are set up for the Antarctic, the Hudson Bay and the South Pacific.

Many ports around the world are vying for a position as turntable or hub in the cruise industry. With many cruise terminals located close to historical city centers, cruise ship activity provide jobs linked to bars, restaurants, convenience shops, etc. Increased visitor expenditure through the multiplier effect can create new investment and employment opportunities. Cruise passengers may also spend time in the metropolitan area before or after their voyages, generating additional economic impacts through their visitor expenditures. Cruise vessels calling a port also generate jobs at the level of pilotage, tugs, provisions, fuel, crew shore leave, passenger services, inspections, immigration, hotels, restaurants, local attractions and other visitor activities in the port area. Further employment is provided by inland transportation involving cruise passengers including air, private car, bus, transit and taxi.

Europe provides a good illustration. Figure 6 shows the cruise passenger that transited at the largest European seaports. In 2008, the European Cruise Council (ECC), MedCruise and their partners calculated that the cruise industry accounted for about 226,000 jobs in Europe, over 10 billion euro of direct expenditure by cruise companies, shipbuilding yards and cruise passengers, and 15 million visits to European ports. Every million euro spent by the cruise industry creates 2.2 million euro in business output and 21 jobs. In many European ports, public and private investments have been channeled to revitalize older port
areas encompassing housing, hotels, maritime heritage projects, sports, recreation, tourism and local commerce. Cruise ship facilities are often found in these waterfront conversion zones so that cruise passengers are within walking distance of cultural sites and life in the city center. Cruise vessels near the city reinforce the maritime link between cities and ports and are visible signs of the touristic attractiveness of the city. Typical examples are Barcelona, Hamburg, Genoa and Antwerp.

Figure 6. Passengers Transited at the 12 Largest European Cruise Ports, 2008-2010

![Passengers Transited at the 12 Largest European Cruise Ports, 2008-2010](image)

Source: based on data of CruiseEurope, MedCruise, Puertos del Estado and various port authorities

5. CONCLUSION

The cruise industry has emerged to become a significant niche in the global tourism industry. Like the container shipping industry, the selection of ports of call and itineraries are carefully pondered to maximize the commercial potential and utilization of the ship assets. Interestingly, cruise ships and containerships spend roughly the same amount of time at the port (about 10-12 hours). The service pattern and distance of cruise services is much similar to feeder services in container shipping, as both are relying on the hub concept (transshipment hub versus turn port). The schedule integrity of cruise shipping is very important and consistently respected, as opposed to containerized shipping where the aggregate performance is around 50%. From a market perspective, the cruise industry has the following unique characteristics usually not found in other segments of the tourism industry:

- Supply push strategy of cruise operators as they aim at ‘creating’ demand simply by providing new capacity (ships);
- Offer itineraries where the whole is essentially greater than the sums of its parts. Specific regional and cultural experiences can be offered through a combination of sailing time and choice of ports of call;
- Expand and capture revenue streams by offering on board goods and services as well as
shore-based excursions;

- Adapt to seasonal and fundamental changes in the demand by repositioning their ships (seasonal) and changing the configuration of their port calls (fundamental). The outcome has been a complementarity between the world’s two largest cruise markets, the Caribbean and the Mediterranean.

Since the cruise industry appears fundamentally to be driven by supply, it is likely that supply saturation, as opposed to demand saturation, will constrain future developments and impose a maturity on an industry that has continued to grow rapidly. While large hub ports have the capacity to accommodate additional port calls, it is the smaller ‘exotic’ or ‘must see’ ports that cruisers are seeking to visit that present challenges for additional capacity. Berth availability and the capacity of small communities to accommodate large tourist influxes of short duration has become a salient issue. This is likely to incite the additional involvement of the cruise industry in terminal operations, a trend that has already taken place with the setting of private port / resort areas. The next step will involve the development of new cruise terminals co-located with service amenities such as hotels, marinas, attractions, condominiums and shopping malls. For instance, the global container terminal operator HPH developed from 2001 Ensenada Cruiseport Village, a 16 hectares complex in the port of Ensenada, Mexico, which includes two cruise ship berths and a marina with 200 yacht berths. An additional berth is planned, in addition to a co-located touristic “village” that includes a hotel, a shopping center, souvenir shops, restaurants, a movie theatre and park areas. Paradoxically, a similar trend was observed in container shipping in recent decades as several shipping lines became, through parent companies, terminal operators. While a further fragmentation of itineraries is likely to take place, a closer integration between the cruise port and cruise shipping is to be expected. Insecurity issues continue to remain a concern and have recently incited cruise lines to revise some of their itineraries (e.g. Mexico, North Africa).
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