

# Common standards in the measurement of economic effects by cruise tourism

Green Cruise Port project, Activity 4.1.2a

Concept Study conducted by Maritime Institute in Gdansk:

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### Introduction

One of the main differences between cruise tourism and traditional tourism is that factors of production of the cruise industry can be acquired from a range of countries. Generally, a tourist destination capital can be sourced internationally but the other factors inputs are obtained from the tourist destination country. No such limitations apply to cruising. Cruise companies can operate as multinational entities, where resources do not need to be acquired from a specific country<sup>1</sup>.

The cruise tourism has a significant economic impact, both globally and at regional and local levels. Recently, the cruise ship industry has been the fastest growing segment in the overall tourism worldwide.

Cruise industry contributes substantially to local, regional and national economies. The cruise lines also boost global economy supporting around 940 thousand jobs and paying around \$40 billion in wages worldwide. Handling around 22 million passengers, cruise industry contributed nearly \$129 billion to global economy in 2014<sup>2</sup>. In Europe the cruise industry supported nearly 350 thousand jobs, paying €10.75 billion in wages in 2014. Cruise lines spend substantial amount of money every year purchasing supplies and services from numerous businesses, including food services, agriculture, textiles, airlines, hotels, etc. By 2020 the cruise industry will invest over \$25 billion in its fleet development, driving job creation and purchases of goods and materials that support local economies worldwide<sup>3</sup>.

Despite the importance that cruise tourism gained in recent years, there are still few studies that attempt to quantify its economic impact. Those few include the worldwide economic impact estimates that are conducted periodically by the International Association of Cruise Lines. These reports however, do not show any territorial disaggregation below country level. The European Commission has also made an attempt to estimate the economic impact of cruises, although the final results are aggregated for all European ports<sup>4</sup>. At a more disaggregated level, there are the impact studies eg. Port Canaveral in Florida, Barbados, Barcelona or Civitavecchia, and others<sup>5</sup>. Apart from the above mentioned elaborations, the number of studies that estimate in detail the economic impact of cruise tourism at regional or local level remains scarce.

The aim of the elaboration is to develop the seaport economic impact model applicable for the cruise port of calls and home port in the Baltic Sea area. The economic impact of cruise tourism and its benefit to local communities depends on various external and internal factors. Also the distribution of revenues resulting from cruise passengers is disparate, with some businesses generating the majority, over 75% of revenues from cruise passengers, while similar businesses receive less than 25% of their revenues from cruises. Moreover, economic impact is determined by a number of

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<sup>1</sup> Cruise tourism: economic, socio-cultural and environmental impacts,(2014)

<sup>2</sup> Travel & Tourism. Global economic impact& issues 2017. World Travel and tourism Council

<sup>3</sup> Fact Sheet. The cruise industry's economic impact. Cruiseforward.org

<sup>4</sup> Tourist facilities in ports. The economic factor. Policy Research Corporation, August 2009 Commissioned by: European Commission,

<sup>5</sup> Juan Gabriel Brida and Sandra Zapata: Cruise tourism: economic, socio-cultural and environmental impacts. Int. J. Leisure and Tourism Marketing, Vol. 1, No. 3, 2010, T. Boccioni: Analisi dell'impatto socio-economico delle attività crocieristiche del porto di Civitavecchia 2015, Economic Impact of Cruise Activity: The port of Barcelona – IREA 2015

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factors depending on particular itinerary and destination's value chain and on the degree to which passengers are able to increase or decrease spending within a destination.

Cruise tourism might be blamed for generating less spending per passenger in the local economy than non-cruise tourists, with passengers staying less time and less tax collected from entry via cruise terminals than airports or via overnight lodging taxes.

Also, cruise tourism may generate less employment at the destination than other forms of tourism, especially at transit ports. Moreover, the cruise tourism tends to keep the majority of associated revenues within the cruise line whilst the local communities, which may provide a large part of the attractiveness and experience, are not benefitting sufficiently from the cruise passengers.

The economic impact of cruise tourism on local economies consists of three different types of spending categories: passenger, crew and ship expenditures. The economic impact generated by shipbuilding, cruise ship suppliers and the setting up of headquarters of the cruise companies do not ultimately affect coastal regions<sup>6</sup>. The average amounts per passenger going onshore shall be extracted, and broken down by category: transit or turnaround passenger. The share of passengers participating in an organised tour is estimated at 65%. It is assumed that around 80% subsequently purchase a tour on the ship, while 20% purchase the tour onshore. This has consequences for expenditures, since tours that are pre-booked on a cruise ship tend to be more expensive by around 50%. By subtracting the intermediary purchases from the total money spent in a local economy, the value added is obtained.

Usually the majority of economic data on cruise ship contributions to local, state and national economies are derived from the cruise shipping industry itself, primarily through its principal trade association. The Cruise Lines International Association (CLIA). While the CLIA's economic impact studies are increasingly comprehensive, with mixed method research approaches and improved transparency, there is no way to independently confirm much of the underlying data. This is especially true for findings showing passenger and crew spending in ports of call, which are derived from proprietary, self-response surveys distributed onboard. In addition, extrapolating ship-wide passenger and crew expenditures on the basis of self-response surveys risks the misstatement of total spend, as individuals who complete such questionnaires may not be representative of other passengers<sup>7</sup>. Much of tourism impacts investigations are the work of economists and have concentrated on the effects of income and employment. Economic impacts are interlinked and cannot be separated from other types of impact.

The economic impact surveys should not be limited to only the direct effects derived from the expenditure of cruise passengers in the destination city, but also additional dimensions of expenditure including spending by shipping companies in terms of a ship's stores, mooring and pilot services, terminal services, waste management etc. as well as and spending by crew members during

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<sup>6</sup> Tourist facilities in ports Growth opportunities for the European maritime economy: economic and environmentally sustainable development of tourist facilities in ports. Study report. Directorate-General for Maritime Affairs and Fisheries, European Communities, 2009.

<sup>7</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas<sup>1\*</sup> under the supervision of Natalie Stoeckl<sup>1, 2</sup> for The Australian Marine Conservation Society and WWF-Australia, April, 2015

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visits in the destination. Hence, the direct effect affects the port, but it also extends to the entire city and its surrounding environment in terms of demand for services in general, including transport, hotels and catering infrastructure, leisure, culture, retail among others. This impact could be extended in turn, to consider the indirect impact, derived from the demand for goods and services generated by this business, and induced impact from the expenditure of the worker's income that has been generated by the direct and indirect effects.

### **1 Methodology**

The methodology is based on the economic theory of multiplier effects where the direct spending are measured and on investigating how these spending circulate and are induced in the economic system. Multiplier effect is a common tool for assessing economic impact. The model will estimate the impacts of current and potential cruise operations at the sea port. The model might also be used to estimate the economic impact on the cruise passengers arriving for the cruise (for example by air). Using the purchase patterns, and the appropriate jobs to sales ratios and personal income measures for the supplying companies, the visitor industry model calculates the direct jobs, induced and indirect impacts that are generated by the cruise service at homeport or the port of call. The methodology is based on a scientific and objective approach to measure the direct, indirect and induced economic effects of ports in relation to the hinterland i.e. the state/region and/or the municipality in which the port is located.

Statistics include maritime transport and tourism as separate categories. Therefore, economic effects are not explicitly interpreted as the services provided at the port itself benefit the maritime transport and all services after leaving the cruiser are beyond broader maritime economy and are instead considered as economic effects typical of the tourism sector.

Economic effects of cruise industry in the sea port are calculated like any other cargo category, in addition with calculation of passengers spending (e.g. hotel transport).

Economic impacts created by a port of call, rather than a homeport call, generate impacts primarily on the landside consisting of tour packages and individual sightseeing excursions. To estimate these impacts, only passenger purchases for local retail/restaurants and tour packages are usually included in the impact analysis. Interviews with local tour operators provide an estimate of the share of passengers that typically purchase land-side tours while on a port of call. These local purchases are converted into direct, induced and indirect impacts using the visitor industry methodology. In addition to the passenger expenditures, the vessels also spend money for line handling, pilots, tender services, and in some cases miscellaneous emergency purchases. These purchases shall also be included in the port of call impact analysis.

The survey shall quantify the impact of cruise tourism in Baltic ports. Information source are based both on direct information provided by the different agents involved and also personal interviews with different institutions, companies and organizations linked directly or indirectly to cruise activity in selected ports. The investigation will go step by step beyond other studies on impacts at a sector level.

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While focussing on jobs the identification of direct port related jobs is generally based on questionnaire and calculation of indirect port related jobs on questionnaire and Input-Output-Charts (regional, sector specific)<sup>8</sup>. Indirect detection of added value contains number of jobs multiplied with value added per head (regional, sector specific)

For each destination the average amount of value added for one job in the industries affected by cruise tourism might be calculated. By dividing the total value added by this figure, the number of jobs per industry (and subsequently per country) shall be calculated.

The Economic Impact Analysis Model of cruise industry for the sea port proposed by Port of Rostock includes four levels of effects generated by port activity.

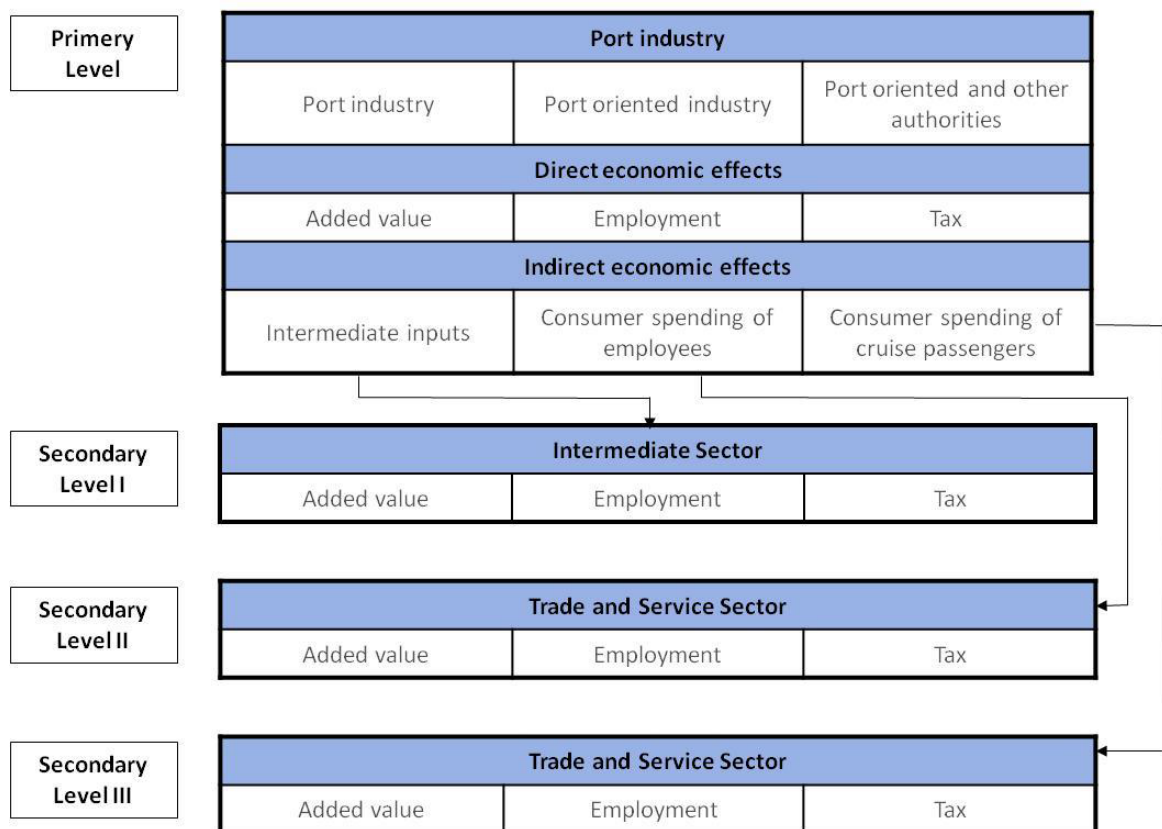


Fig. 1. Economic Impact Analysis Model generated by port activity

Source: Breitzmann, K.-H. et al: *Wirtschaftliche Effekte und Ausstrahlung der Hafen-und Seeverkehrswirtschaft Mecklenburg-Vorpommerns, Rostocker Beiträge zur Verkehrswirtschaft und Logistik, Heft 10, Universität Rostock 2000, S. 12.*

Definitions set by the model include: Port industry, Ship supply and other service providers, Port oriented industry, Port oriented and other authorities.

Port industry: handling and storage companies, port operating companies, shipping agents, transport and forwarding companies, pilots and towage companies, shipping companies (e.g. ferry and cruise operators).

<sup>8</sup> „With-and-Without“- approach: Port related jobs and added value Scientific standard

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Ship supply and other service providers: ship insurance companies, maintenance industry for ships and port infra- and/or suprastructure, other port related industry and service provider.

Port oriented industry: trading companies settled in the respective port, production companies settled in the port, import and export companies for different kinds of goods, fishery industry, hotel and restaurant industry, tourist service agencies, other port related industry

Port oriented and other authorities: city administration, water police/coast guard, boarder police, custom, maritime and hydrographic agency, shipping authority, other institutions and authorities.

In order to assess the economic impacts of potential cruise business at the sea port a spreadsheet framework shall be proposed, which can be used to assess the impacts of such factors as:

- Number of cruise vessel calls;
- Number of passengers;
- Passenger characteristics:
- Local expenditures;
- Local residents versus tourists;
- Length of time and where stayed after disembarking;
- Different types of cruise service, including:
- Homeport;
- Port of call;
- Size of crew; and
- Size of vessel.

Calculation of indirect economic effects -secondary level I is focused on:

- Intermediate effects including identification of intermediate inputs for different industry branches in different regions. Projection shall be based on questionnaire return rates and mapping with the multi-level approach
- Employment effects based on a branch related turnover-employment-ratio.
- Tax effects shall be reported by respective tax offices / administrations

Calculation of indirect economic effects - secondary level II is focused on:

- Intermediate effects including expenditures for consumption of goods are calculated based on interviews and projections according to the multi-level approach
- Employment effects set on a branch related turnover-employment-ratio. Calculation of net wages in different regions related to the consumption of goods by port industry employees through different methods (mostly base on publicly available statistics). Development of a concept to structure expenditures of goods in different trade and service industry branches as well as Calculation or projection of turnover per employee in the trade industry.
- Tax effects are reported by respective tax offices / administrations

Calculation of indirect economic effects - secondary level III is focused on:

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- Intermediate effects based on interviews with cruise shipping companies, hotel and restaurant industry, touristic service providers, transport operators, incoming agencies
- Employment effects including calculation of a value for expenditures per day and cruise passenger. Projection is based on available studies to passenger spending in the ferry industry sector - very similar to cruise passenger spending
- Tax effects are reported by respective tax offices / administration

The required data will be collected from different sources and approach including:

- Development of a comprehensive questionnaire
- Interviews with relevant stakeholders, companies and passengers
- Interview period should cover the peak cruise season, at least a minimum time of three consecutive months
- Interviews with cruise passengers at different locations in the cruise city, but predominantly very close to the cruise ship piers -> if approved by incoming agencies even on day tours
- Time of interviews: after arrival and before the day trips started; during the day with passengers staying in the cruise city; after passengers return from the day trip
- Additional data collection with questionnaires outside of the interview period to reach a critical mass of data
- Research of available statistics at the relevant statistical offices or administrations before the data collection and/or interviews start

The analysis of economic effects will be combined with an analysis of customer satisfaction in order to get a comprehensive picture.

Cruise ship expenditure data are collected from cruise operator<sup>9</sup> via interview. The results of these interviews are used to develop a typical ship disbursement account profile. Associated with each vessel expenditure category are jobs to sales ratios with the types of firms providing the goods and services to a vessel at homeport. The jobs to sales ratios as well as personal income levels are developed from official statistics data sources for the area. The total annual expenditures, by type of service, is multiplied by the corresponding jobs to sales ratios to estimate the total direct job impacts in the maritime service sector, by type of service.

Surveys of local vendors calculated as to the origin of the goods (produce, liquor, flowers and retail items) that are loaded onto the vessels at port. In general, the cruise service at the homeport have low impact on employment levels with these firms. In addition, the majority of the food and goods originate from all parts of the region or the country. Majority of products supplied on cruise vessels is purchased from distributors sourcing nationwide. The revenue impacts are estimated directly from the expenditure profiles provided by the carriers. Direct income is estimated from the average annual salaries developed by type of firm, from the interviews.

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<sup>9</sup> For example data for calculation of the cruise ship expenditure for port of Seattle were provided by Princess Cruises, Holland America Line and Norwegian Cruise Line



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In order to quantify the economic impact of cruise activity for cruise ports the traditional methodology is usually adapted, used in impact studies based on CLIA surveys.<sup>10</sup> Knowing the average daily spending for all categories of cruise passengers, their average stay in the city, and the quantification of the flow of cruise passengers in the city, the calculation of the direct impact generated by cruise passengers in the city can be made. Analysis of passenger spending are by large based on estimation. Figures might be compiled by local business owners.

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<sup>10</sup> Contribution of Cruise Tourism to the Economies of Europe 2015 Edition, CLIA

## 2 Cruise traffic overview

### 2.1 Global and European tendencies

Tourism is perceived as an industry that has a positive impact on economic growth. Economic benefits are probably the main reason why so many countries are interested in this sector; its contribution to the world economy is obviously important<sup>11</sup>.

Cruising is a driving force of economic growth worldwide. The cruise industry supports 939,232 jobs, paying almost \$40 billion in wages worldwide. With of 22 million passengers worldwide the cruise industry contributed \$119.9 billion to the global economy in 2014. By 2020, the cruise industry will invest more than \$25 billion to update and grow its fleet, driving job creation and purchases of goods and materials that support local economies around the world.

In the USA the cruise industry in 2013 the industry generated \$119.9 billion globally and provided more than 891,000 direct and indirect jobs as a result of cruise line, passenger and crew spending. The cruise industry positively impacts other sectors. Cruise lines spend billions each year purchasing supplies and services from country businesses, including food services, agriculture, and apparel and textiles. U.S. Passengers spend an average of \$416 flying to their cruise port, \$258 on lodging the night before their cruise, and \$122 each day at port, supporting airlines, hotels, and local tourism businesses.

In Europe the cruise industry supported 348,930 jobs, paying €10.75 billion in wages in 2015. In Asia in 2015, the cruise industry will add nearly a thousand port calls in Asia, bringing more passengers to the Far East than ever before and generating billions in positive economic impact for the Asian economy. In Australia a record breaking 1 million passengers cruised from Australia in 2014, translating to more than \$3 billion for the Australian economy<sup>12</sup>.

The cruise industry experienced rapid growth. In 2011, the cruise industry generated US\$40 billion in overall economic activity and 350,000 jobs. Vessels range in size from the gigantic, Royal Caribbean's Oasis of the Seas, which accommodates 5400 passengers and 2165 crew, to the small elite, like Polar Pioneer, which carries 56 passengers and 20 crew. The majority of the fleet today is in the 3000 to 4000 passenger range. International cruisers average age is 46 years<sup>13</sup>. To meet the changing patterns and preferences of customers, most cruise lines work around specific cruise themes and voyage lengths.

CLIA projected that more than 24 million passengers will take sail in 2016 globally, compared to 10 million in 2006 and 1.4 million in 1980. The OECD recently predicted that the cruise ship market will grow 3.3% by 2030<sup>14</sup>. Demand for new vessels might outpace delivery. The capacity of shipyards is not sufficient to meet demand for new cruise ships.

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<sup>11</sup> Juan Gabriel Brida, Sandra Zapata. *Anatolia: An International Journal of Tourism and Hospitality Research* Volume 21, Number 2, pp. 322-338, 2010, Anatolia. Printed in Turkey.

<sup>12</sup><http://www.australiancruiseassociation.com/reports>

<sup>13</sup> CLIA

<sup>14</sup> CLIA

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Tabl. 1. Cruise Ship Orders 2016-19 (€27,275 million of the new investment is placed in European yards)

Year of completion	No of ships	No of berths	Investment €million
<b>Total</b>	50	133,265	28,442
<b>2016</b>	10	27,621	6,071
<b>2017</b>	11	27,820	6,180
<b>2018</b>	13	27,629	6,215
<b>2019</b>	16	50,195	9,976

Source: CLIA

The world cruise ships are growing in size, the biggest can accommodate more than 6 thousand passengers and 2.5 thousand crew members, for example Oasis of the Seas (360m length, 47 m width and 9.3m draft) can accommodate 6630m passengers and 2160 crew members.. Currently 21 % of world cruise fleet capacity represent ships with length more than 300 m, 78 % of cruise tourists travel on vessels over 250 m in length, whilst 57 % of world cruise fleet consists of vessels with length more than 275 m.<sup>15</sup>

At the same time, smaller ships, and some larger ones as well, are able to bring tourists to new ports which were previously inaccessible or off the routine voyage. There are clearly benefits to be gained from cruise ship visits, however there are also issues which have to be considered in order to optimize benefits and reduce negative impacts of cruise ship visits. Destinations are not equal, they differ in various characteristics, which determine the attractiveness of each destination to a cruise line. This also relates directly to the importance that a destination may have in dealings with potential and current cruise operators<sup>16</sup>.

On the European cruise market in 2015 the capacity of 42 cruise lines domiciled in Europe, operating 123 cruise ships totalled 146,000 berths. Additional 18 non-European lines, deployed in Europe 60 cruise ships of vessels with total capacity of around 89,000 berths. About 30% of worldwide cruise passengers totalling 6.4 million European residents booked cruises and 5.85 million passengers embarked from a European port, of which 4.9 million European nationals. Around 250 European port cities hosted altogether 29 million cruise visitors an 14.4 million crew. Majority of cruises visited ports in Mediterranean, Baltic and other European regions.

Cruise activity is beneficial for tourism and economic activity in major port cities. The Mediterranean area accounts for almost 20% of the global cruise market, being the second most popular cruise destination after the Caribbean . The cruise industry has thus become an engine of economic acceleration for many local economies in the Mediterranean. The Port of Barcelona is the European

<sup>15</sup> Travel & Tourism. Global Economic Impact& Issues 2017. World Travel and tourism Council

<sup>16</sup> Managing Cruise Ship Impacts: Guidelines for Current and Potential Destination Communities A Backgrounder for Prospective Destination Communities by Ted Manning, President Tourisk Inc. 2006

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leading port for moving cruise passengers. The Port of Barcelona has relevance not only as a port of call but also as a home port, where boarding and disembarkation account for 52% of the total movement of cruise passengers in 2014. A total of 2,364,292 cruise passengers visited Barcelona in 2014.

### **2.2 Cruise traffic on the Baltic Sea**

The Baltic Sea is one of the world's most densely operated marine areas. The number of passengers visiting the Cruise Baltic destinations increased by an average annual rate of 9.9% per year, from 1.1 mill. in 2000 to 4.3 in 2016 and by 1.2% in 2016 compared to number of passengers in 2015. Expected number of passengers in 2017 is expected to increase by 13% compared to 2016. The number of calls totalled 2,163 calls in total. From 2000-2016 the number of calls increased by an average annual rate of 2.7% per year, from 1,453 in 2000 to 2,163 in 2016. An increase of 15.2% in the total number of calls is expected in 2017<sup>17</sup>.

Baltic Sea region receives more than 350 cruise ships with over 2100 port calls each year, 40 cruise lines and 88 ships (2015), 4,3 million passengers (10 % of total cruise passengers), annual turnover of around € 443 million and 5500–11500 jobs, most of ports located to the city centers and attractions, many piers and terminals within walking distance, variety of bigger and smaller ports – various itinerary opportunities. During the 2014 cruising season, 77 different cruise ships owned by 37 operators sailed in the Baltic Sea. Half of these were smaller vessels with a of 1,500 or less persons, including staff and passengers, 8 vessels, or 10%, were large vessels with a maximum capacity of 4,000 persons or more, 5 main destinations St. Petersburg, Copenhagen, Tallinn, Helsinki and Stockholm, account for 67 % of the cruise ship traffic in terms of calls. In 3 ports, including Visby, large ships anchor outside the port and use shuttle boat transportation to the shore. Voyages between two ports lasted commonly between 8 and 20 hours at sea, and the cruise ships stayed usually in port between 8-10 hours. the international cruise ship voyages involved in total 6,55 million person-days, comparable to year-around habitation of 18,000 people.

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<sup>17</sup> Cruise Baltic Market Review 2017

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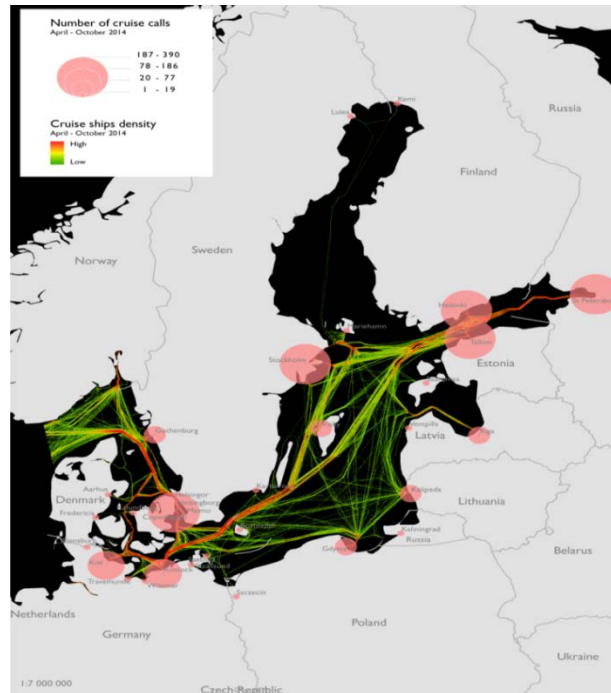


Fig. 2. Cruise ships number of calls and traffic density in the Baltic Sea in 2014.

Source: HELCOM

The number of turnarounds in 2016 increased by 14.1% from a total of 403 in 2015 to 460 turnarounds. In 2017 an increase of 3.5% is expected. From 2000-2016 the number of turnarounds increased by an average annual rate of 9.6%.

Tabl. 2. Cruise ships calling Northern Sea and Baltic Sea ports in 2014 - by country

Country	Number of calls	Capacity thous GT
<b>TOTAL</b>	<b>9291</b>	<b>495768</b>
Denmark	404	25138
Germany	401	24320
Sweden	388	21017
Estonia	344	19955
Finland	319	16904
United Kingdom	298	10422
Ireland	162	7736
Latvia	66	2738

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Lithuania	40	1387
Netherlands	19	1301

Source: EUROSTAT

Copenhagen is the largest port in terms of passengers. The number of passengers in 2016 totalled 677 thousand, which represented a 9.3% compared to 2015. Rostock recorded 553 thousand in 2016 representing 14% growth against 2015. Stockholm and St. Petersburg experienced a decline in 2016<sup>18</sup>. Top 5 Baltic Cruise ports recorded 1.319 calls out of the total 2.163 calls in 2016, accounting for 63.9% of all calls.

The segment of large liner ships consists of Rostock 181calls, Kiel 147, Oslo 82, Kristiansand 66), Riga 63, and Klaipeda 52 calls. The segment grew in passenger numbers 7.9% in 2016. The destinations had 591 calls in 2016 and will increase by 2.2% in 2017 to 604 calls.

The medium segment consists of Visby with 43 calls, Goteborg 34, Gdansk 32 and Aarhus 29 calls. The segment increased in passenger numbers by 2.5% in 2016 and is expected to increase 21.4% in 2017. Gdansk and Aarhus both grew by 16.2% and 144.2%. The destinations had 138 calls in 2016 and will increase with 40.6% in 2017 to 194 calls.

Tabl. 3. Cruise traffic in selected Baltic Sea ports

Port	2010	2012	2014	2015
Copenhagen	662.000	840.000	740.000	677.000
Gdynia	125.005	108.628	85.000	71.923
Goteborg	51.730	83.000	188.000	100.000
Helsinki	342.000	368.000	420.000	436.000
Kiel	341.391	348.180	360.000	458.152
Klaipeda	35.201	26.769	57.797	60.202
Kristiansand	31.700	70.000	120.369	109.866
Oslo	261.000	303.486	235.509	169.616
Riga	58.248	83.000	59.520	69.164
Rostock	214.800	385.800	500.000	485.000
St. Petersburg	427.500	452.000	513.885	505.359
Stockholm	415.000	470.000	467.000	530.229

<sup>18</sup> Cruise Baltic Market Review 2017 (Feb. 2017)

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Tallin	390.000	440.504	479.031	500.622
Bergen			422.759	458.000

Source: Cruise Europe

The Baltic and Northern European ports are ports that mostly handle freight traffic. Taking care of passengers traveling on both passenger/freight, or freight/passenger ferries usually takes place at ferry terminals located at dedicated wharves equipped with appropriate infrastructure to ensure smooth and safe handling of cargo and passenger operations. Cruise service is provided at selected ports interested in passenger traffic and with varying degrees of infrastructural adaptation to the special needs of cruisers and their passengers. The broader range of services is provided by the ports where passenger embarkation and disembarkation takes place, with adequately equipped terminals. In this case, the plane and local transport (taxis, buses), restaurants and other services bring additional revenues also before boarding and after the cruise. Cruisers, like most of commercial fleet, are operated under foreign flags, which significantly diminishes their ability to generate tax revenues.

The Baltic Sea destination market accounted for just under 9% of German passengers. Destination Markets for German Cruise Passengers in 2014 was as follow (in %)<sup>19</sup>:

Mediterranean/Black Sea	31,1
UK/Ireland/Western Europe	14,6
Norway/Arctic	12,5
Atlantic & Canary Isles	11,2
<b>Baltic Sea</b>	<b>8,9</b>
Caribbean/Bermuda	8,6
Arab Gulf/Indian Ocean	..3,9
US/Canada	.. 1,5

There were eleven German national brands that were identified for 2014, namely: AIDA, Cruises Passat Kreuzfahrten GmbH, SEA CLOUD CRUISES GmbH, FTI Cruises GmbH, Phoenix Reisen GmbH, TransOcean Kreuzfahrten, Hansa Touristik GmbH, PLANTOURS Kreuzfahrten, TUI Cruises GmbH, Hapag-Lloyd Kreuzfahrten GmbH, Reederei Peter Deilmann GmbH. These are cruise lines and tour operators that are registered in Germany and/or have their principal administrative offices in Germany. All other cruise lines are considered to be international cruise brands. These lines source passengers from Germany and may have marketing offices in Germany but their principal administrative offices are located elsewhere. In total there are more than 40 additional cruise lines that are considered as international cruise brands but not all of these source passengers from Germany.

Germany is a source market for cruise passengers and is also a cruise destination with major cruise ports along the North and Baltic Seas. During 2014 there were over 600 cruise ship calls at German ports handling altogether nearly 1.56 million cruise passengers including embarkations,

<sup>19</sup> CLIA Germany)

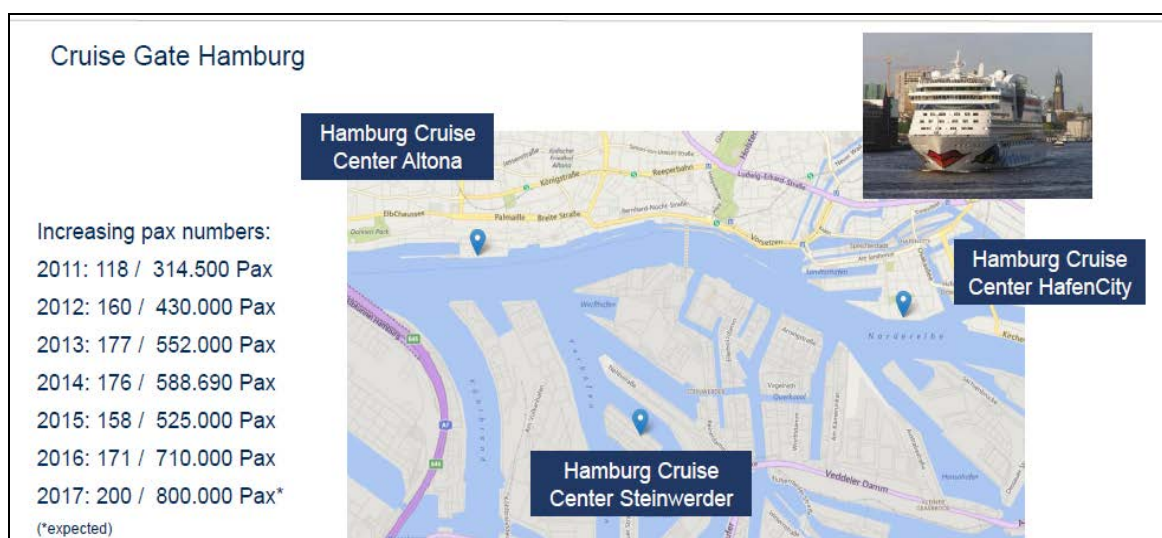
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disembarkations and transit. Hamburg is principal homeport of Germany with 281,458 embarkations followed by Kiel with 145,050 embarkations<sup>20</sup>. Hamburg is primarily a homeport with embarkations and disembarkations accounting for 95% of the cruise passenger traffic, while Kiel is slightly more diversified with transit passengers accounting for 17% of the cruise passenger traffic and Rostock/Warnemünde is Germany's largest transit port with 261,350 transit passengers accounting for 54% of the total cruise passenger traffic at the port. The remaining ports, which include Bremerhaven, Travemünde, Sassnitz, Sylt and Wismar, handled approximately 107,000 cruise passengers during 2014.

### 2.3 Overview of selected Sea cruise ports in the Baltic Sea area and neighbouring ports of North Sea

#### Hamburg

In Northern Europe Hamburg is gradually becoming one of Europe's top cruise destinations. Cruise Gate Hamburg is a subsidiary of the Hamburg Port Authority. Cruise Gate Hamburg (CGH) recorded 170 cruise ship visits in 2016 and more than 700,000 passengers compared to 153 calls and 520,000 passengers in 2015.



Source: Hamburg Port Authority

Since the beginning of 2017 CGH has been operating all three of Hamburg's cruise centres: Altona, HafenCity and Steinwerder<sup>21</sup>. Port of Hamburg as a cruise home port is perfectly adapted to handle very large cruise ships. The port is well placed both in terms of technical equipment and capacities. The management of CGH is currently working on further improvement of the accessibility of the Cruise Center Steinwerder by public transport. From 2016 CGH has been providing free-of-charge shuttle bus services from the Veddel S-Bahn station to the Cruise Center Steinwerder. CGH will have more berth assignment options after the widening of the Entrance to the Vorhafen Harbour Basin, which will create the possibility of berthing ships with a maximum beam of 40 metres at Altona Terminal.

<sup>20</sup> German Ocean Cruise Market 2015, CLIA Deutschland, prepared by BREA

<sup>21</sup> <https://www.cruisegate-hamburg.de/en/news/hamburg-cruise-shipping-industry-steering-towards-success-cgh-announces-record-figures>



## Common standards...

### Helsinki

The Port of Helsinki receives over 360 000 cruise passengers and 270 cruise calls a year. Helsinki Airport offers the largest number of international destinations in Northern Europe and 10 destinations in Asia. Good flight connections and its location in the heart of cruising area provide significant opportunities to business. Helsinki airport handles 13.4 million passengers annually, providing sufficient capacity for cruise passengers to travel to Helsinki.

Helsinki Cruise Terminal offers spacious accommodation and a very smooth passenger service in tested surroundings. Passenger arrival by bus is in front of the terminal. There is no need for your cruise guests to carry baggage or to queue. A spacious transit area leading passengers to the pier. From the ship to the aircraft: boarding passes and flight check-in are provided in the same location. Baggage is transferred directly to and from the ship. The distance between the airport and the cruise terminal is 15 km. The access from the buses to the terminal and through the concourse into the cruise ship and vice versa has been tested by a turnaround of 40,000 passengers a season.

Main characteristics of the Port of Helsinki<sup>22</sup>:

- 11.530 vessel calls in total annually
- 8.5 million passengers in total annually
- 270 cruise calls per year
- 360 000 cruise passengers per year
- 8 cruise quays
- 2175 meters (1.352 miles) total cruise quay length

All quays equipped with facilities for discharging waste water

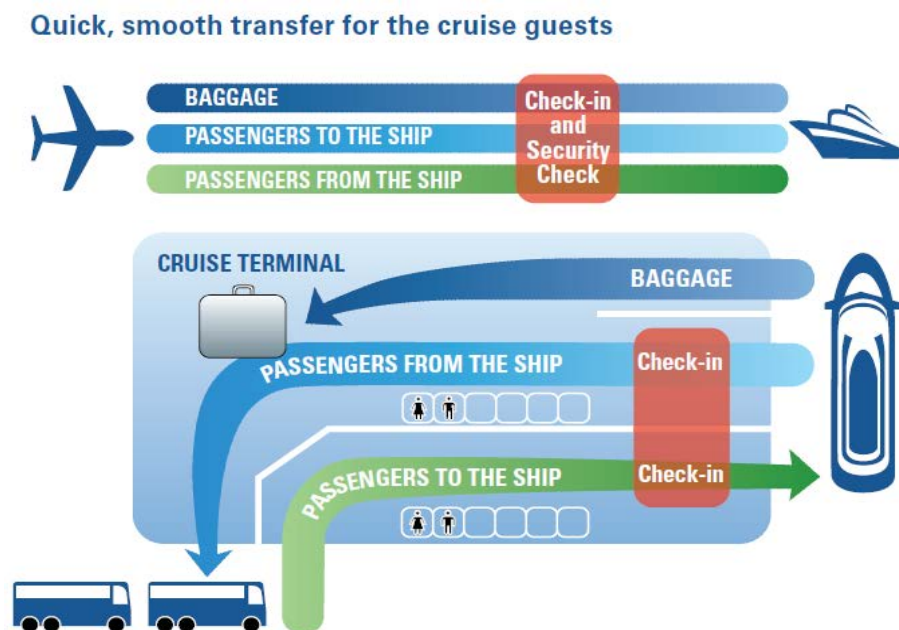


Fig. 3. Helsinki Cruise Terminal passenger managing system

Source: HELSINKI HOME PORT for Cruises around the Baltic Sea. [www.portofhelsinki.fi](http://www.portofhelsinki.fi)

<sup>22</sup> Source: HELSINKI HOME PORT for Cruises around the Baltic Sea. [www.portofhelsinki.fi](http://www.portofhelsinki.fi)

## Common standards...

Helsinki Home Port partners, the Port of Helsinki and Helsinki Airport, combine to provide smooth-running service and have extensive experience of turnarounds in Helsinki.

### Oslo

Norway is the leading nature-based cruise destination in Europe. The coast line is of 1300 nautical miles. The cruise ships dock in the port of Oslo on four different piers, all close to the city center and to each other. The following cruise piers are used:

Cruise pier	Length (metres)	Draft (metres)	Other
Søndre Akershus Pier	345	10,3	No limitation on air draft and beam
Vippetangen	249	7,3	
Revierkaia	294	8,3	
Filipstad	330	8,5	



Fig. 4. Cruise piers at port of Oslo

Source: [http://www.oslohavn.no/en/passengers/passenger\\_traffic/cruise/](http://www.oslohavn.no/en/passengers/passenger_traffic/cruise/)

Most of the cruises that visit Oslo are continuing on to other destinations after a day or two in the capital. A popular route is the Northern European route, where the ships sail on to the Baltic Sea and visit cities such as Tallinn and St. Petersburg. Another popular route is along the Norwegian west coast, visiting the Norwegian fjords.

Cruise traffic in port of Oslo:

	Calls	Passengers
2013	159	298 000
2014	128	255 000
2015	102	198 268

## Common standards...

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### Riga

In port of Riga cruise ships mainly dock on the river fairly close to the old town though smaller ships may dock a bit more south. Cruise ships have also been known to dock at Krievu Island (Krievu Sala) much further out. Three berths are dedicated to cruise ships:

- MK-3 and MK-4 (closest possible location to the Old Town), total length: 463 m, depth 9.5 m, max particulars of vessel allowed 290 m at 8.2 m draft
- JPS-1, max vessel's length allowed 110 m, max vessel's draft allowed 7.6 m
- Berth No. JPS-2, located next to JPS-1, is dedicated to ferries however can also be used for cruise ships. Terminal building is located next to berth No. JPS-2. Max particulars of vessel allowed: 280 m at 7.6 m draft.



Fig. 5. Cruise port of Riga

Source: <http://www.rigapt.lv/services/ship-services/cruise-ships/>

The following dues are set at the Port of Riga: Tonnage Dues, Canal Dues, Sanitary Dues, Berthing Dues, Passenger Toll and Small Tonnage Duty. The Port dues and charges are paid to the Port Authority. The berthing Due are forwarded by the Freeport Authority to the berth owner or possessor, withholding administrative costs from the collected Berthing Due, which amount shall be fixed by the mutual Agreement. Administrative costs are the costs pertaining to the technical condition control measures related to the mentioned berth, and the costs related to the access fairway maintenance and the Freeport Authority administration costs. Tonnage Dues are not collected from a passenger ship or a cruise ship. The attached table indicates the port dues rates charged from cruise ships at Port of Riga

## Common standards...

Type of dues	Unit	Rate in €	Remarks
Canal Dues	€/GT	0.10	calculated separately for each ship's call at the port, shifting from one berth to the other, leaving for the roadstead, arriving at the berth from the roadstead, and departure
Sanitary Due	€/GT	0, 06	0.02 €/GT for cruise and passenger ships operated by a shipping line providing for at least 350 ship calls per calendar year
Berthing Dues	€/GT	0.007	collected for usage of any berth from all ships for every case of using the berth or applying hourly rate for berth use
Passenger Toll	€/pax	1	for each passenger upon arrival and departure of the ship
use of tugs in mooring and unmooring operations	€/GT	0.17	mooring and unmooring
		0,22	shifting from one berth to another
		0,17	shifting within limits of one berth
delivery of the ship generated oily waste (MARPOL Convention, Annex I) to the specially equipped vessel, truck or to the treatment facilities	€/m <sup>3</sup>	19.90 6	to a specially equipped vessel or a truck to the treatment facilities
delivery of garbage (MARPOL Convention, Annex V)	€/m <sup>3</sup>	21.15	waste is collected at the berth, where the ship is located.
fresh water supply to a ship	€/t	2	water supplied from berth
		4.50	water supplied by floating craft
		2	water supplied to vessels staying on outer roads

### Tallinn

Port of Tallinn is one of the biggest cruise and passenger ports in the Baltics. Cruise vessels are mainly accommodated in the Old City Harbour, located in the very heart of Tallinn and from May 2006 in Saaremaa Harbour. Old City Harbour is Estonia's Biggest Tourism Gateway: territory 54.2 ha, aquatory 75.9 ha, total length of berths 5 km, number of berths 25, max. depth 10.7 m, max. length of a vessel 340+ m. Up to 85% out of over 0,5 million of cruise tourist in port of Tallin are on connection Tallinn – Helsinki. Shuttle service is usually provided to the main gate (Viru) but it is an easy half mile walk to the old city through the Pikk gate. There typically is a small market setup on the pier.



Fig. 6. Cruisers in Port of Tallinn

Source: <http://www.portoftallinn.com/cruise>

### Stockholm

There are several main piers in central Stockholm. Smaller ships may dock right at old town at Skeppsbron. Larger ships could be docked at either Stadsgården, Frihamnen, or Värtahamnen. Statsgården is the most convenient for larger ships. The distance to old town is 1.6 miles. It is very convenient to take the hop-on, hop-off boats or ferries that have a stop at the end of the pier. BÖJ1 Förtöjning På Strömmen is a mooring buoy between Gamla Stan and Statsgården and passengers can be tendered to a pier just south of Skeppsbron. Some ships may tender or dock at Nynashamn which is 36 miles south of Stockholm. Trains run twice hourly to Stockholm and the journey takes just over an hour. In Nynahamn in 2016 a SeaWalk floating pier was installed similar to the one used in Geiranger.



Fig. 7. Port of Stockholm - Cruise Ship Docked at Stadsgården

Source: <http://dmcsweden.se/port-of-stockholm>

## Common standards...

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### **Sankt Petersburg**

Sankt Petersburg in Russia is a major cruise destination of the Baltic Sea, with cruise ships touring Northern Europe, Scandinavia, and the Baltics. It is Russia's most popular cruise port, and the only one with a dedicated passenger port. In 2015 Passenger port of Saint Petersburg recorded 223 cruise and 6 ferry calls, which brought a total of 491.507 visitors to the city.

Passenger port is located on around 60 islands in the mouth of the Neva River. Passenger port of Saint Petersburg has 7 berths, which allows it to berthing up to 7 cruise ships at once. The total length of the berths is 2 171 meters (two of them are designed to serve ferries as well). There are 4 terminal buildings that provide access to the berths. The total space of those terminals is 29 770 m<sup>2</sup>. The total area of the port territory is 33.03 hectares.

The Port can handle vessels up to 320 meters in length, to 42 meters in width, and with draft of up to 11 meters. Larger vessels must have written permission to enter or exit the Port of St. Petersburg. Only small cruise ships can dock in Sankt Petersburg close to the city center at either English Embankment or Lieutenant Schmidt Embankment. Large cruise ships dock at the new Marine Facade complex three miles northwest of the city center, where there is a need to clear customs in the cruise terminals. Smaller cruise ships sail up the Neva river and dock at either English Embankment or Lieutenant Schmidt Embankment much closer to the city center<sup>23</sup>. Since 2003 cruise and ferry passengers visiting Sankt Petersburg in a tourist group do not need a visa while staying for less than 72 hours.

The port can handle up to 18.000 passengers per day and up to 2 million passenger per year. The transport infrastructure of Passenger port of Saint Petersburg is modern and well-developed. There is enough space to park 518 cars and 221 buses, and a helicopter landing pad for helicopters weighing up to 13 tons.

Most lines offer two full days (and one night) in the city; some stay for two nights (and offer 2.5 days in the port of call).

The Sea Port of St. Petersburg commonly features in the cruise ship schedules of Cunard, Princess, and other major cruise companies but these larger cruise ships have traditionally docked at the commercial harbour which meant a lengthy wait to get through customs and poor facilities catering to tourists.

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<sup>23</sup> <http://www.portspb.ru/en/>



Fig. 8. Sankt Pertersburg – cruise ships docked at Marine Façade

Source: <http://www.portspb.ru/en/>

### **Copenhagen/Malmo**

Copenhagen/Malmo Port is the leading northern European cruise ship port and is the ideal home port for cruises in the Baltic Sea and along the western coastline of Norway. Copenhagen is the hub for the cruise industry in the region. About 45% of all calls are turnaround calls.

Copenhagen port water depth is up to 10,5 m depending on quay-location and there is no limitation for length, beam and air draft. Capacity of quays:

- Nordre Toldbod 225m, water depth of 7.4m
- Langelinie 710m, water depth at the southern end is 9.1m, there is space for from two to four ships, depending on their length and draught, the northernmost 345m of quay water depth is 10m.
- Orientkaj Freeport 525m, water depth of 9.5m
- Levantkaj 400 m
- and Ocean Quay 1.100m, with state-of-the-art terminals, water depth over all is 10,5m.

Tug service is non-compulsory however cruise vessels with a draft more than 6 meters are recommend to use pilot.

The expansion of the port consider the challenges of future demands and develop the facilities even further. The pier allow berthing for three large cruise ships along a 1,100 metre long and 70 metres wide dedicated cruise quay. There are three terminal buildings, each of 3,300 m<sup>2</sup> with green roofs. Each terminal building have 1,800 m<sup>2</sup> for passenger handling and 1,500 m<sup>2</sup> for luggage handling.

## Common standards...

Malmö water depth is up to 9.1m, draft 8.6, depending on quay-location, length max 240 m, beam, max 32,5 m. air draft, no limitation. Tugs are on pilot's request, pilotage, compulsory for ships exceeding 90 m length. Capacity of quays:

- Frihamns kajen: 500 m, max length of ship is 240m, water depth of 9,1m, beam max. 32,5m.
- Västra hamnen: 150 m

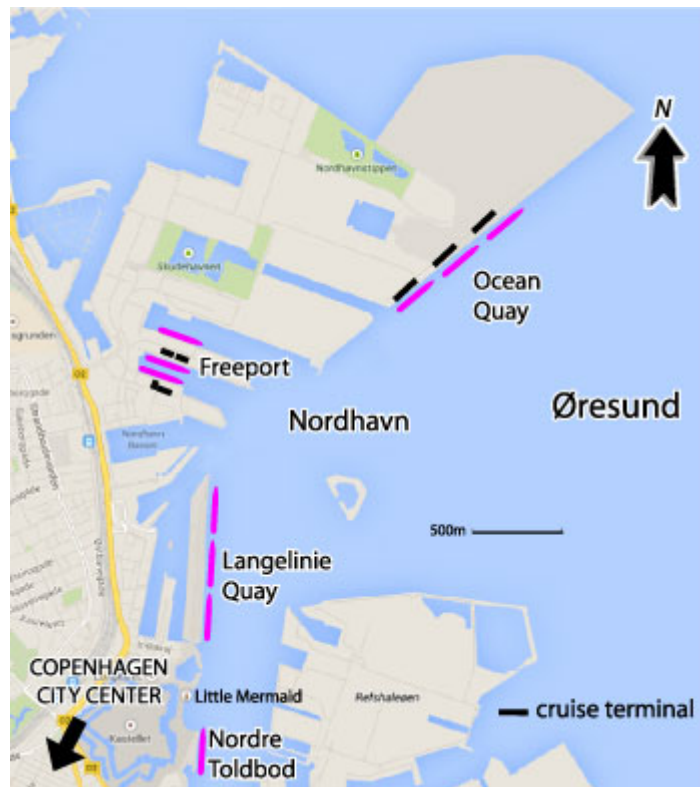


Fig. 9. Copenhagen cruise port location

Source: <http://www.cruisetimetables.com/cruises-from-copenhagen-denmark.html>

### Kaliningrad

Kaliningrad region is a Russian exclave separated from the main part of Russia by Lithuania and Belarus. Therefore, an excursion trip to Moscow would take 20 hours by train and crossing two countries, which makes quite a difference with a similar trip from another Russian cruise port on the Baltic Sea, namely Sankt Petersburg. The trip takes only 4 hours by a high speed train. This limits the tourist attractiveness of the port to Kaliningrad region.

The key factor shaping the economic activity in the Kaliningrad region are the cruise passenger flow and average spending per passenger. There are average 250 thousand cruise passengers per year whilst the average spending per passenger is 3750 rub. The average yearly spending of cruise passengers is 937,5 mill rub.

Cruise ships to Kaliningrad dock at the Baltiysk port. Their passengers are then transported to the city via charter buses.



## Common standards...

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- Kaliningrad is served by the Khrabrovo Airport connecting it to other Russian territories, as well as to some European cities.
- From Baltiysk there is a regular ferry service to St Petersburg Russia, Stockholm Sweden, Copenhagen Denmark, Riga Latvia and Kiel Germany.
- The Kaliningrad Passazhirsky railway station connects the city to Moscow, St Petersburg, Adler and Chelyabinsk.
- Regional trains from Kaliningrad-North (on Victory Square, in the city centre) depart to the local Russian towns (in Kaliningrad Oblast) Sovetsk, Svetlogorsk and Zelenogradsk.



Fig. 10. Port of Baltiysk

Source: <https://port.today/a-new-russian-cruise-port-to-be-built-in-kaliningrad/>

In order of gaining competitiveness on cruise market Kaliningrad port infrastructure should offer 2 berths with length 350 m each, and 10,5 m depth.

The borders of the port of Kaliningrad in Russia have been extended to include the site for development of a new terminal in the town of Pionersky. The terminal's construction is expected to start in 2017. International marine terminal Pionersky will be constructed on the basis of the current infrastructure of Pionersky port in Kaliningrad region, located on the Russian coast of the Baltic Sea, bordering Poland in the south and Lithuania in the north.

### **2.4 Environmental impact of cruise tourism**

Despite the significant economic benefits that cruise activity generates in the economy, such activity also generates negative externalities associated with congestion and environmental issues. Main activities at the seaside are in hands of private shipping lines and international bodies, e. g. the International Maritime Organization (IMO), whilst on land the responsibility is in hands of national port administrations and terminal operators.

Cruise ship environmental impacts can be associated with ship operations or tourist activities. Conservation International (and many jurisdictions) have created guidelines for ship operations which are a key point of reference for control of damage from e.g. emissions, anchors, waste disposal, oil spills etc. Most major cruise lines corresponds to these guidelines, and in some jurisdictions there is strict enforcement. On-shore effects and actions by cruise ship visitors include:

## Common standards...

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- Impacts of shore tours on ecological resources.
- Impacts of sea tours on fragile ecology.
- Impacts of levels of use on natural systems.
- On shore tourist waste management.
- Resource consumption (water, energy).

As ship order book and passenger number grow, so do cruise impacts on the environment and local communities, such as:

- Modifications to the natural and existing environment, exploitation of local construction.
- Operational impacts related to the use of energy, water and those such as antifouling and accidental or deliberate physical damage to marine ecosystems.
- Impacts associated with transferring people to and from departure and destinations points; which increases the use of air travel.
- The impacts of recreational activities on wildlife such as disturbance and littering, and pressures on endangered species.

Port related environmental issues are subjects to many EU initiatives resulting in specific environmental regulations associated with particular problems, and contributions to sustainability. In recent times, cruise lines and ports have put a lot of efforts into reducing, selecting and managing generated wastes implementing the requirements of MARPOL 73/78 as well as those imposed by the European legislation. There are different requests in the case of cargo and oil markets, from those in the case of cruise ports. Different wastes are produced in the case of each shipping market<sup>24</sup>.

The environmental costs of the sector are mostly non-measurable. Cruise ships, which can carry as much as 5,000 passengers and crew, are producing large volumes of waste. The different types of waste and damage produced by a typical ship are included in the Protocol 1978 known as MARPOL 73/78. These environmental impacts are mainly generated in coastal areas close to the busiest port destinations. One of the difficulties in implementing MARPOL regulations arises from the diversity of 'flag states' in which cruise ships are registered. Despite port destinations can perform its own inspection to verify a ship's compliance with international standards, sometimes they do not have an appropriate infrastructure.

Among diverse impacts on the environment caused by cruise shipping is the generation of garbage that might be harmful when it is not properly managed. The amount and types of waste may vary from one ship category to another, but cruise ships are at the highest amount of garbage producers. Cruise ports seek to implement solid waste management and develop facilities, technologies or services aiming to allow continuity to a cruise ship's garbage life cycle in a more efficient way. As there are differences between land-based and maritime waste management, the MARPOL Annex V garbage classification varies from the segregated types of garbage put in practice onboard and ashore with destination for recycling<sup>25</sup>. The Annex V of the international Convention for the

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<sup>24</sup> Athanasios A. Pallisa, Aimilia A. Papachristoua and Charalampos Platias, Environmental policies and practices in Cruise Ports: Waste reception facilities in the Med, SPOUDAI Journal of Economics and Business, Vol.67 (2017), Issue 1, pp. 54-70.

<sup>25</sup> A. Pallis, A. Papachristou, C. Platias, SPOUDAI Journal, Vol.67 (2017), Issue 1, pp. 54-70

## Common standards...

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prevention of pollution from ships (MARPOL 73/78) sets restrictions on the handling of garbage, including all food, domestic, and operational waste. Garbage might be dumped overboard when a vessel reaches a certain distance from shore as long as the ship follows waste discharge guidelines. Annex V prohibits dumping garbage from 3 to 25 miles from shore, unless it is ground into small pieces. Disposing of plastics is also prohibited in territorial waters. In addition, MARPOL imposes an obligation on certain parties to provide facilities for the reception of ship-generated residues and garbage that cannot be discharged into the sea.

The quantity and types of garbage to deliver by cruises into a port reception facility may vary significantly and that makes the ports waste services planning and provisions more difficult to manage in terms of demand, capacity and adequacy under Annex V of MARPOL. Main principles for waste management are:

- Self-Sufficiency at community (of an integrated and adequate network of waste disposal facilities),
- Implementation of best available techniques not entailing excessive cost (reducing environmental costs as much as possible and in the most economically efficient way),
- Proximity (wastes should be disposed of as close to the source as possible),
- Producer Responsibility (economic operators and manufacturers have to be involved in the objective to close the life cycle).

Mandatory compliance is not enough to secure uniformity of port level practices. Given the differences in size and traditions of European (cruise) ports, the variation of infrastructure, or the dissimilarities between WRH (Waste Reception and Handling Plan) plans developed by port authorities, and approved by relevant competent authorities, might be significant. The same might apply as regards the on-shore selection of the wastes that are segregated on board<sup>26</sup>.

New ships are generally far more efficient and environmentally sound than older ones. A cruise ship is a de-facto floating resort hotel. Larger new ships have facilities like wave riders, water slides, ice rinks. Ship have all of the challenges and opportunities which relate to greening a hotel and resort facilities, as well as those related to transportation. Like any 1500 room hotel, a cruise ship consumes energy, uses water, produces waste, and uses toxic substances (e.g. paint, solvents, and cleaners)<sup>27</sup>.

The average cruise ship of 3,000 passengers and crew generates about 50 tons of solid waste in a single week. These vessels, or the ones with double capacity (i.e. the Royal Caribbean Oasis class vessels that exceed capacities of 6.000 passengers) cruise with a capacity utilisation that exceeds 90%, thus produce significant wastes and residues to be delivered at the cruise ports they visit.

Pollutants and waste from cruise ships include air emissions, ballast water, waste water, hazardous waste and solid waste. An average cruise ship generates a minimum of 1 kg of solid waste plus two bottles and two cans, per passenger per day and an average of 50 ton of sewage (black water) per day. A figure of 3.5 kg/passenger/day is quoted by the IMO. the estimated amount of generated

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<sup>26</sup> Technical Recommendations on the Implementation of Directive 2000/59/EC on Port Reception Facilities. EMSA 2016

<sup>27</sup> Sustainable Destinations: Indicators and Observatories Informing Sustainable Development of Tourism Destinations. Dr. Edward W.(Ted) Manning, Tourisk Inc., UNWTO Madrid 2013

## Common standards...

waste (typical one-week voyage) includes 25,000 gallons of oily bilge water, 210,000 gallons of sewage (or black water), 1 million gallons of non-sewage wastewater from showers, sinks, laundries, baths, and galleys (or grey water) and eight tons of solid waste (i.e. plastic, paper, wood, cardboard, food, cans, glass).<sup>28</sup>

Tabl. 4. Summary of Cruise Ship Waste Streams

Type of waste	Est. amount generated in 1 week voyage (in gallons)	Content type
Sewage (black water)	210.000	Waste water and solids from toilets
Gray water	1.000.000	Waste water from sinks, showers, laundries. Contains detergents, cleaners, oil and grease, metals, pesticides, medical wastes
Hazardous wastes	110	Photo chemicals
	5	Dry cleaning waste (chlorinated solvents)
	10	Used paint
	unknown	Other waste, such as print shop waste, used fluorescent and used light bulbs and batteries
Solid waste	8 tons	Plastic, paper, wood, cardboard, food, cans, glass
Oily bilge water	25.000	Liquid collected in the lowest point in the boat

Source: MARAD (2002).

The U.S. EPA estimates that a cruise ship with 3,000 people on board generates 210,000 gallons of sewage weekly (enough to fill 10 backyard swimming pools), and 1 million gallons of grey water (another 40 swimming pools full of waste). One cruise ship equals 50 swimming pools full of highly polluted waste which can be dumped into sea each week.<sup>29</sup>

Cruise sewage has to be properly neutralized. The enormous amounts of food and drink consumed on cruise ships, along with water from laundry, pool, medical facilities, photo labs, spas, and dry cleaning stations, is produced on each cruise voyage. At sea, what is flushed down the toilet can actually be dumped untreated into the ocean, which causes contamination of fish and other marine life, so long as the ship is at least three nautical miles from shore.

With cruise activities contributing substantially to the growth of the ports of call, it is important to secure cruise port infrastructure and related port services. The existing waste reception facilities

<sup>28</sup> Based on the US Department of Transportation data (MARAD 2002).

<sup>29</sup> <https://www.epa.gov/vessels-marinas-and-ports/vessel-sewage-discharges>

## Common standards...

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need to secure a smooth ship-shore interface during the process of waste handling that the regulatory framework has foreseen.

The European PRF Directive pursues the same aim with MARPOL, which has been signed by all EU member states. However, MARPOL Convention regulates discharges by ships at sea, while the Directive applies only on ship operations in EU ports. It addresses in detail the legal, financial and practical responsibilities of the different operators involved in delivery of ship-generated waste and cargo residues.

Under MARPOL and the EU PRF Directive, ports are obliged to provide adequate port waste reception facilities with no undue delay of the ship. The key requirements of the PRF The European PRF Directive requests cruise ports to establish cost recovery systems to encourage the delivery of waste on land and discourage dumping at sea. In line with the Directive, all ships calling at a member state port should bear a significant part of the cost (meaning at least 30% of the costs) whether they use the facilities or not. In practice, the most commonly applied fee selection scheme is that of collecting indirect fees irrespectively of the actual use of the facilities. When delivered waste exceeds specific quantities there is an extra charge.

Directive include an obligation of member states to ensure the availability of PRF adequate to meet the needs of ships normally visiting the port, without causing undue delay. Ports have to develop and implement a waste reception and handling plan. The master of a ship completes a notification form and forwards it at least 24 hours prior to arrival, in order to inform the port of call about the ship's intentions regarding the delivery of ship-generated waste and cargo residues. There is a mandatory delivery for all ship-generated waste, taking into account a possibility for the vessel not to deliver waste if it has sufficient dedicated waste storage capacity until the next port of delivery. The covering of the associated costs, the implementation of a cost recovery system (e.g. a waste fee) is foreseen, providing an incentive to ships not to discharge ship-generated waste at sea.<sup>30</sup>

Different types of garbage need different type of handling facilities. Trucks, containers, vessels and skips are the most commonly garbage reception facility. Special vessels and containers are also used, while the least commonly used facilities are barrels, packages, drums, bags and pipes. Containers are the basic storage facility in most ports for all types of garbage, except cooking oil, whereas liquid tank is the most appropriate type of storage. Other types of storage include skips and platforms, but these are less used. Some ports have storage facilities inside their port area. Different types of storage facilities exists for the treatment of each type of waste and cargo residues.

Many of the cruise ports do not offer segregation services prior to waste disposal, mainly because ports have typical assigned this type of services to external contractors, who transfer the garbage in their premises, where the segregation is taking place prior to disposal. Similar to the segregation

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<sup>30</sup> Commission of the European Communities (CEU), 2000. Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues - Commission declaration. Official Journal L 332, 28/12/2000 P. 0081 – 0090.

Commission of the European Communities (CEU), 2015. Inception Impact Assessment: REFIT Revision of EU Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues. DG MOVE-UNIT D.2.

## Common standards...

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services prior to disposal, the vast majority of cruise ports do not offer treatment services prior to disposal. Landfill and recycling are the most used disposal methods.<sup>31</sup>.

The available waste port reception facilities are under different proprietary status. This status is typical based on the specialization. In the case of all waste reception facilities private ownership is dominant. In the case recycling plants, 56% of the available facilities are privately owned. This percentage equals to 31% in the case of incineration and biological plants, and storage areas, and 25% in the case of the energy recovery plants. Comparing to the other PRF, the public proprietary status is comparatively high in the case of the storage areas. The biological processing and energy recovery plants are not public owned.

The most common practice and related technology that is used by cruise ports as preparatory activity for disposal or/and for use of the treated garbage in case of reuse, energy recovery, etc., is segregation. Segregation takes place outside the port premises, specifically in dedicated plants. When incineration is used the ashes are re-used in the cement industry. As regards biological reprocessing, which is applied mainly in animal carcasses and food waste, these are processed for inactivation and composting. The landfill disposal method is used when no other method can be applied and the waste is not dangerous. In general, cruise ports follow the rules of the municipal waste management plan.

Regarding energy recovery disposal method many ports report that there are not such practices in place. New terminals should install shore electric power facilities to encourage ships to turn off their diesel engines while at berth. Among strategies for cleaner operations is the global strategy trend for stakeholders, particularly ships and ports. On the other hand, shore power is expensive when compared with fuel switching. The per tonne costs of reducing NO<sub>2</sub>, PM, SO<sub>2</sub> and CO<sub>2</sub> are close to \$56000, \$1.4 million, \$290000, and \$2300<sup>32</sup>. Among ports using shore power in the Baltic and Nord Sea area are: Goteborg, Zeebrugge, Kotka, Kemi, Oulu, Antwerp, Lubeck, Karlskrona, Oslo, Rotterdam, Ystad, Trelleborg.

The emissions in ports represent a relatively small percentage compared to emissions at sea. The levels are low, especially if SO<sub>2</sub> is taken into consideration, especially that EU Directive 2005/33/EC, require that all ships must use 0.1% sulphurous fuel. Emissions in local communities cause damage to society, causing i.e. health damage and reduced life expectancy. Therefore, emissions can also be expressed in terms of monetary damage to society (rising health costs)<sup>33</sup>.

Cruise ships differ in types and sizes, but are generally substantial in size therefore at berth, a cruise ship still needs significant power to maintain its operations as on average 25% of the passengers and 50% of the crew remain on board<sup>34</sup>. Due to the berthing locations, quite often in city centres, the

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<sup>31</sup> A. Pallis, A. Papachristou, C. Platias, SPOUDAI Journal, Vol.67 (2017), Issue 1, pp. 54-70

<sup>32</sup> Wang H. and others: Costs and benefits of shore power at the port of Shezhen. The International Council on Clean Transportation (ICCT). December 2015. [www.theircct.org](http://www.theircct.org)

<sup>33</sup> Tourist facilities in ports Growth opportunities for the European maritime economy: economic and environmentally sustainable development of tourist facilities in ports. Study report. Directorate-General for Maritime Affairs and Fisheries, European Communities, 2009.

<sup>34</sup> Since the turn of the century the average size of cruise vessels increased to 200 metres long, 26 meters beam, and a passenger capacity of 3,220 passengers (Cruise Industry News, 2016).

## Common standards...

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environmental impact caused by ships can bear problems for local communities in port cities, i.e. the reduced value of property as a consequence of pollutants might mitigate the economic development of coastal regions.

Analyses of ship movements, passenger capacity and port facilities help to clarify what the real needs of cruise traffic might be in terms of sewage management in the Baltic Sea cruise ports. HELCOM provides information on port reception facilities for sewage (PRF) and their use by international cruise ships in the Baltic Sea area: length of sea voyages, frequency, duration of port visits, sewage facilities and traffic trends. Dumping the waste in the port or port entrance is forbidden (except grey waters). It must be removed by specialized equipment and companies.

The Baltic Sea is a relatively small area with special environmental characteristics and business potential for ports. The cruising ports are also close to each other. This indicates that vessels do not need to hold on to produced waste for extended times. Efficient waste management in cruising ports around the Baltic Sea is a crucial element in minimizing environmental impacts.

A range of incentives are commonly used in the Baltic Sea area to encourage discharge of wastes at harbours. From 1 June 2019 a ban on new ships discharging sewage into the Baltic Sea special area will come into force. For current cruise ships the deadline is 1 June 2021 and ships sailing straight to Saint Petersburg will have a two-year transition period until 1 June 2023.

To protect the Baltic Sea environment, the Helsinki Commission (HELCOM) introduced the NSF-system in 1998. HELCOM's definition of the NSF is "a charging system where the cost of reception, handling and disposal of ship generated wastes, originating from the normal operation of the ship, as well as of marine litter caught in fishing nets, is included in the harbour fee or otherwise charged to the ship irrespective of whether wastes are delivered or not". Thus, ships calling at ports with the NSF-system implemented will pay the same port fee whether the ship leaves waste or not. Passenger ships or other ships calling at the port regularly during the year can have an authorized certification not to leave their waste in the port. Thus, these ships are obligated to handle their own waste management. The NSF-system encourages ships to deliver waste ashore, thereby avoiding undesirable waste streams between ports and preventing discharges into the sea. The NSF system requires every ship to pay for the reception, handling and disposal of oil residues, sewage and garbage at any calling port. The fee involved covers waste collection, handling and processing, including infrastructure, and is usually counted on the basis of a ship's gross tonnage. Moreover, the waste management fee does not cause financial profit for the port. The fee only covers investments in reception facilities, the operation of reception facilities, repair and maintenance costs of such facilities and the costs of handling, treatment and final disposal of received wastes. Hence, the system should not be economically competitive amongst the ports. As ships are required to leave any waste generated from their last port of call at the following port.<sup>35</sup>

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<sup>35</sup> Port Waste Management in the Baltic Sea Area: A Four Port Study on the Legal Requirements, Processes and Collaboration. Irina Svaetichin and Tommi Inkinen. MDPI 2017.

### **3 Overview of the cruise sector economic impact**

#### **3.1 Factors determining cruise lines visit at destination**

The market drivers of the cruise industry are similar to those of tourism in the world, particularly the rising affluence of the global population and the growing popularity of exotic and resort destinations.

Local enthusiasts of cruise tourism claim that it is valuable due to its considerable economic impacts on the ports of call, while opponents maintain that the economic impacts of cruise visitors are relatively marginal. The economic impact of cruise tourism on local economies consists of three different types of spending categories: passenger, crew and ship expenditures.

Impacts of various forms of tourism, including cruise tourism, and economic and environmental impacts, are subjects of concern for destinations, tourism planners, policy makers and research sector.

Tourists spending money in a port region contribute to the local economy and consequently to the generation of jobs. In order to calculate the number of jobs, the value added that is generated in a local economy has to be calculated.

An economic impact analysis uses the expenditures of tourists to calculate the direct economic impact on a local economy. For every product sold in (for example) a shop, a shop owner made purchases from its suppliers. These costs are qualified as intermediary purchases. Input-output models, containing the relative share of intermediary purchases for every euro spent in an industry, were obtained to quantify this information for each EU Member State.

The indirect economic benefits derive from the cruise industry result in part from the additional spending by the suppliers to the cruise industry. For example, food processors must purchase raw foodstuffs for processing; utility services, such as electricity and water, to run equipment and process raw materials; transportation services to deliver finished products to the cruise lines or wholesalers; and insurance for property and employees. Consequently, the indirect jobs are generated in virtually every industry with a concentration in those industries that produce goods and services for business enterprises.

The induced economic benefits are derived from the spending activities of those directly and indirectly employed as a result of the European cruise industry. This spending supports jobs in retailing, the production of consumer goods, residential housing and personal and health services.

Cruise related tourist (direct) expenditure are classified into four principal categories: passenger, crew, vessel (including state and federal charges and taxes), and supporting expenditures (i.e., expenditures related to the promotion and marketing of cruise tourism payable within the local economy).



## Common standards...

Cruise tourism has significant environmental, economic and socio-cultural impact on visited ports. It is an activity that provides economic income to the harbour and creates new jobs<sup>36</sup>.

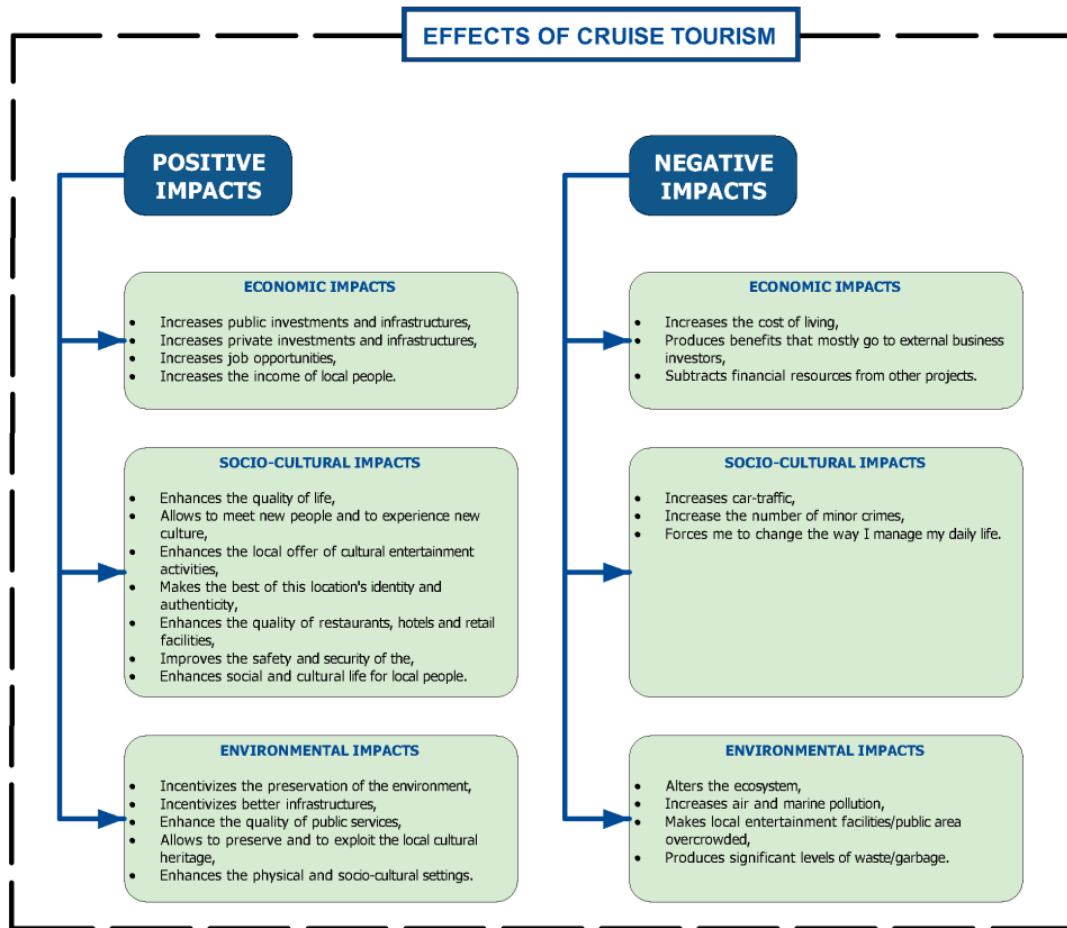


Fig. 11. Socio-economic and environmental effect of cruise industry

Source: Economic and Law Department, Maritime Institute in Gdansk

The influx of large numbers of visitors in a short period of time has the ability to overstretch the usage of community services and facilities. These negative impacts influence the visitor impression and also creates discomfort for local community. It is also important to balance cruise tourism with other sectors of tourism. Moreover, the tourism industry often creates seasonal jobs and promotes the influx of new workers. Escalated use of the environment during the peak visitor season caused competition between visitors and locals for resources and space. Also, tourism might cause changes in the character of community life, pace of life, commercialization, social friction, and cultural exploitation. However, in many cases the economic effects of tourism have been adequately balanced with the socio-cultural and environmental effects.

Cruise lines visit a destination are determined by the following factors<sup>37</sup>:

<sup>36</sup> Sirvan Sen Demir and others: The role of port operations in the development of cruise tourism: The case of port of Antalya. Journal of Human Sciences. Volume 13. Issue 3. Year 2014.

<sup>37</sup> Juan Gabriel Brida, Sandra Zapata: Cruise tourism: economic, socio-cultural and environmental impacts. Int. J. Leisure and Tourism Marketing, Vol. 1, No. 3, 2010 205. Inderscience Enterprises Ltd.

## Common standards...

- Consumer demand – passengers tell the cruise lines and travel agents which regions and destinations they want to visit, and cruise lines plan their itineraries accordingly
- Revenue opportunities – cruise lines analyse the choice of shore side programs and tour options to be offered to their guests and how much revenue it can produce on each specific destination
- Return on investments – Cruise lines look at the costs of operating a vessel when visiting a destination / region and compare it to the revenue that they are able to create. At the end of the day, a cruise line wants to make sure that they actually make a profit when visiting a destination
- Visitor satisfaction levels – if cruise passengers are happy, they will rate the destination high and the cruise lines will most likely visit again. If the ratings are low, they will probably not return
- Safety and security – Operations (either at berth or anchor) need to be conducted safely, the port needs to be ISPS certified, there need to be a safety plan for the port area, and the city and port need to provide a safe environment for the cruise passengers
- Fit in greater itinerary – a destination does not exist on its own in the itinerary. Cruise lines look for destinations that complement each other in an itinerary and that are able to sell well to the consumer.



Fig. 12. Cruise lines destination factors

Source: Department of Shipping, Trade and Transport, University of the Aegean, Greece.

### **3.2 Economic impact of cruise sector in Europe**

Leisure cruising has expanded from a very small part of the oceanic passenger industry into a complete and complex vacation business, including many sectors of the travel industry. Currently, there are more than 30 ships scheduled to join the global fleet over the next four years representing investments over US\$ 20 billion. North Americans represent around 80% of all worldwide market. The participation of the cruise sector in the international worldwide tourism corresponds to 1.6% of the total tourists and 1.9% of the total number of nights. Revenue of cruise corporations represents the 3% of the total international tourism receipts. For many destinations cruises constitute substantial percentage of the total of tourism arrivals generating important income through the services supplied by the port and expenditures of passengers and crew. It is expected that the cruise industry continues growing regardless of being perceived as a direct contender of sun and stay over tourism.

Segments of the industry:

- Serving as major source and destination markets for cruise passengers,
- Maintaining headquarters facilities and providing crew,
- Providing shipbuilding and/or repair services (4,6 billion Euro),
- Provisioning and fuelling for cruise ships

Direct economic impacts of the cruise industry are derived from a broad range of activities including:

- port services and cruise industry employment;
- transportation of cruise passengers from their place of residence to the ports-of-embarkation;
- travel agent commissions;
- spending for tours and pre- and post-cruise stays in UK port cities;
- passenger spending for retail goods in UK port cities; and
- purchases of supplies by the cruise lines from UK businesses.

Direct employment impact includes jobs directly generated by seaport activity. Direct jobs supported by the passenger cruise service include jobs with companies providing services to the vessel as well as local hotels, restaurants, transportation firms and retail stores providing services to the passengers. These jobs are, for the most part, local jobs.

The indirect economic benefits derived from the cruise industry result in part from the additional spending by the suppliers to the cruise industry. For example, food processors must purchase raw foodstuffs for processing; utility services, such as electricity and water, to run equipment and process raw materials; transportation services to deliver finished products to the cruise lines or wholesalers; and insurance for property and employees. Consequently, the indirect jobs are generated in virtually every industry with a concentration in those industries that produce goods and services for business enterprises.

Indirect jobs are generated in the local economy as the result of purchases by companies that are directly dependent upon activity at the seaport, cruise activity at the cruise terminals in the port. These purchases are for goods such as office supplies and equipment, maintenance and repair

## Common standards...

services, raw materials, communications and utilities, transportation services and other professional services. The indirect jobs are generated in virtually every industry with a concentration in those industries that produce goods and services for business enterprises. These jobs to sales ratios include numerous spending rounds associated with the supply of goods and services. Special care has to be undertaken to avoid double counting the indirect impacts, and to specifically include only the expenditures by the directly dependent companies, which are mainly local.

The Economic Impact Analysis Model is shown in the attached graphic:

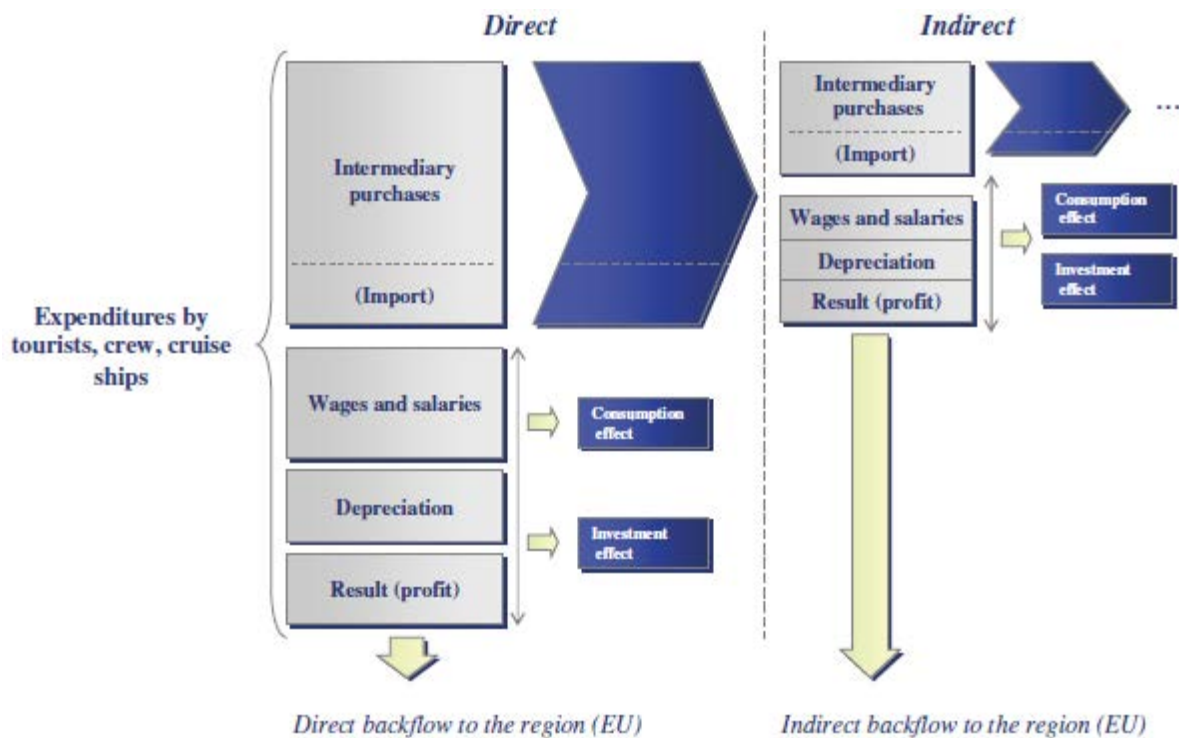


Fig. 13. Economic Impact Analysis Model

Source: Policy Research Corporation

The induced economic benefits are derived from the spending activities of those directly and indirectly employed as a result of the cruise industry. This spending supports jobs in retailing, the production of consumer goods, residential housing and personal and health services. Induced employment impact includes jobs created throughout the local economy because individuals directly employed due to seaport activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region, since they are estimated based on local and regional purchases. Moreover, indirect jobs are created in the region due to purchases of goods and services by companies.

Related user employment impact is associated with jobs with companies using the seaport to ship and receive cargo and with companies whose employees are regular users of the seaport. These jobs are not entirely dependent upon the seaport, but reflect the importance of the seaport to local companies. While the facilities and services provided in the seaport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if

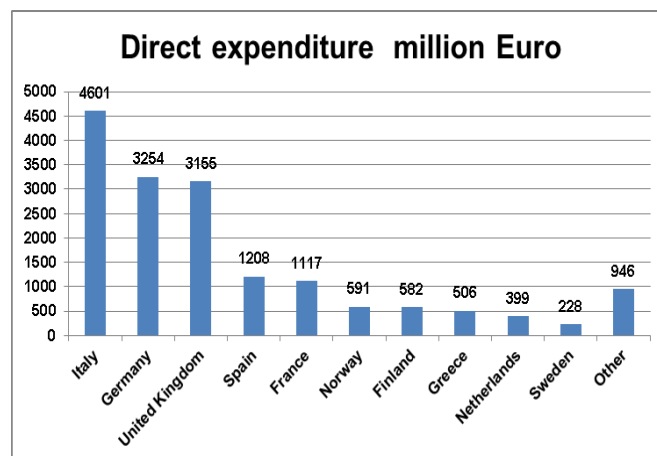
## Common standards...

marine activity were to cease. These include shippers of agricultural products, as well as importers of consumer goods, and local manufacturers located within the state .

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to seaport activity. Re-spending of these earnings throughout the region for purchases of goods and services has to be estimated. This, in turn, generates additional jobs, namely the induced employment impact. This re-spending throughout the region is estimated using a personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within a region. A larger re-spending effect occurs in regions that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with regions that import a relatively large share of consumer goods and services (since personal earnings leak out of the region due to these out-of-region purchases). The direct earnings are a measure of the local impact since those directly employed by seaport activity receive the wages and salaries. The re-spending effect is regional. Part of this total personal earnings impact is next allocated to specific local purchases These purchases are next converted into retail and wholesale induced jobs in the regional economy.

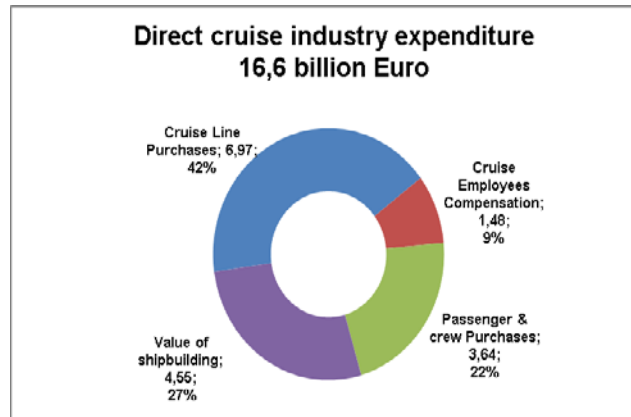
Regional and local tax impacts are tax payments to the state and local governments by companies and by individuals whose jobs are directly dependent upon and supported (induced and indirect jobs) by activity at seaport. The tax impacts include state and local taxes collected from all sources, both personal and business taxes.

Induced impacts are those generated by the purchases of the individuals employed as a result of seaport, airport and real estate activity. For example, a portion of the personal earnings received by those directly employed due to activity at the seaport and airport is used for purchases of goods and services, both in the region, as well as out-of-region. These purchases, in turn, create additional jobs in the region, which are classified as induced.



Source: *Contribution of Cruise Tourism to the Economies of Europe 2015 Edition, CLIA*

## Common standards...



Source: *Contribution of Cruise Tourism to the Economies of Europe 2015 Edition, CLIA*

Expenditures by a transit tourist in EU destinations include: tours and entrance fees (passenger participating in organised tours -30, not participating in organised tours -10), food beverages (both categories of passengers – 10), shopping ((both categories of passengers – 15), transportation ((passenger participating in organised tours -0, not participating in organised tours -5), port fees (both categories of passengers – 5), other (both categories of passengers – 5). Weighted average expenditures was assumed at €60.

For turnaround passenger the average expenditure per turnaround passenger visit is estimated at around €100, of which:

	Overnight stay	No overnight stay
Tours and entrance fees	15	5
Food and beverages	35	5
Shopping	20	20
Transportation and parking fees	20	20
Hotels	70	0
Port fees	5	5
Other	5	5

Crew tend to spend € 25 per disembarkation, and on average) 50% of the crew disembark per port visit. For ship expenditures in ports, it was calculated that ships spend €6 per transit passenger per transit call and € 24 per turnaround passenger for a turnaround call (embarkation and disembarkation combined). The difference between these costs is due to the necessary costs for luggage handling and customs for turnaround passengers.

The economic impact of cruise industry in Europe in 2014 based on CLIA surveys is shown in the tables included below.

## Common standards...

Tabl. 5. Total economic impact of cruise sector in 2014

Specification	Direct expenditures € million	% of direct expenditure	Total jobs number of employees	% of total jobs	Compensation € million	% of compensation
<b>Total Europe</b>	<b>16.637</b>	<b>100,0</b>	<b>348.930</b>	<b>100,0</b>	<b>10.753</b>	<b>100,0</b>
of which:						
...direct			<b>169,851</b>	<b>49</b>	<b>5.08</b>	<b>47</b>
indirect			<b>127,720</b>	<b>36</b>	<b>4.08</b>	<b>38</b>
induced			<b>51,379</b>	<b>15</b>	<b>1.59</b>	<b>15</b>
Germany	<b>3.254</b>	<b>19,6</b>	<b>49.559</b>	<b>14,2</b>	<b>1.801</b>	<b>16,7</b>
UK	<b>3.155</b>	<b>19,0</b>	<b>71.022</b>	<b>20,4</b>	<b>2.594</b>	<b>24,1</b>
Norway	<b>591</b>	<b>3,6</b>	<b>14.745</b>	<b>4,2</b>	<b>477</b>	<b>4,4</b>
Finland	<b>582</b>	<b>3,5</b>	<b>8.743</b>	<b>2,5</b>	<b>330</b>	<b>3,1</b>
Sweden	<b>228</b>	<b>1,4</b>	<b>3.022</b>	<b>0,9</b>	<b>119</b>	<b>1,1</b>
Netherlands	<b>399</b>	<b>2,4</b>	<b>6.481</b>	<b>1,9</b>	<b>187</b>	<b>1,7</b>
Denmark			<b>2,942</b>	<b>0,8</b>	<b>103</b>	<b>1,0</b>
Poland			<b>4,000</b>	<b>1,1</b>	<b>20</b>	<b>0,2</b>
Cruise line employees - total	<b>1.480</b>	<b>8,9</b>	<b>64.873</b>	<b>18,6</b>	<b>1.480</b>	<b>13,8</b>

Source: CLIA

Tabl. 6. Cruise industry expenditures for newbuildings & refurbishment in Europe in 2014

Specification	Total	Newbuildings	Refurbishment
	€ million		
<b>Total Europe</b>	<b>4,552</b>	<b>3,646</b>	<b>906</b>
of which:			
...Germany	<b>1,651</b>	<b>1,204</b>	<b>447</b>
% of total	<b>38,3</b>	<b>33,8</b>	<b>49,3</b>
Finland	<b>460</b>	<b>407</b>	<b>53</b>

## Common standards...

% of total	18,2	11,2	5,8
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Source: CLIA

National or regional taxation and fees collected from cruise operations and passenger spending may not be equally distributed within the local economy. Other entities within the local value chain such as ground transportation, receptive handlers, attraction/excursion operators, shopping and food and beverage facilities may be owned by foreign entities or non-local national entities whose economic gain is generally distributed elsewhere, even though they are not owned by the cruise line.

Ships also purchase goods and services with significant economies of scale and benefit from negotiating reduced purchase prices, often with choice of procurement among the countries along the itinerary. However, the infrastructure required for a transit destination to bring cruise tourism is different from required for overnight visitors. Transit ports do not require airports, hotels, adequate food and beverage outlets and general support infrastructure and supply chain required to accommodate overnight visitor arrivals and activities<sup>38</sup>.

Passenger spending in turnaround ports prior to or after their cruise voyage may not be counted as cruise passenger spending. Therefore a comparative analysis of spending and revenue of cruise tourists should not necessarily be benchmarked against that of non-cruise tourists within the same destination without proper life cycle cost analysis to include costs of infrastructure development and maintenance.

### 3.3 Economic impact of cruise sector in Baltic Sea Region

During 2013 there were 2,960 cruise calls at Baltic ports, of which: transit calls 2.551, turnaround calls 409. An estimated 540,527 passengers embarked on cruises from Baltic ports. The principal turnaround ports were: Copenhagen, Kiel and Rostock, which accounted for about 90% of total embarkations in the region. Another 3.35 million passengers arrived at ports in the Baltic. Of these, an estimated 3,23 million (96%) disembarked and visited the port and destination. The five largest transit ports – Sankt Petersburg, Tallin, Helsinki, Stockholm and Copenhagen accounted for 67% of the Baltic total. An estimated 425,700 crew disembarked during cruise calls during 2013 and visited the Baltic ports.

The impacts of cruise industry in the Baltic Sea region are based on surveys from 2011 to 2013 at 12 Baltic ports in 9 different countries, namely: destination Copenhagen, Ronne and Aarhus (Denmark, Stockholm and Malmo (Sweden), Helsinki (Finland), Oslo (Norway) Klaipeda (Lithuania), Tallin (Estonia), Gdynia (Poland), Rostock (Germany), Sankt Petersburg (Russia)<sup>39</sup>.

The results of the cruise market activity and economic impact on the economy including direct cruise industry expenditure is regularly recorded in CLIA reports. For selected Baltic countries the information extracted from CLIA reports are shown in the table below.

<sup>38</sup> By technical definition cruise ship passengers on transit calls can be classified as visitors or excursionists and not tourists.

<sup>39</sup> Overview Economic Impact of Cruise Tourism Baltic Sea Region. Peter Wild for BREA and G. P. Wild (International) Limited



## Common standards...

Tabl. 7. Direct cruise industry expenditures, employment and compensation share in selected Baltic countries in 2014

Specification	Direct spending		Total employment		Compensation share
	€ million	% share in total	Number of jobs	% share in total	% share in total
<b>Total Europe</b>	16,637	100,0	348,930	100,0	100,0
of which					
...Germany	3,254	19,5	49,559	14,2	7,6
UK	3,155	19,0	71,022	20,4	39,2
...Norway	591	3,6	14,745	4,2	6,6
Finland	582	3,5	8,752	2,5	
Netherlands	399	2,4	6,481	1,9	0,8
Sweden	228	1,4	3,022	0,9	
Denmark	221	1,3	2,942	0,81,1	
Poland			4,000	1,1	

Source: CLIA

As for estimated passenger and crew spending in 2013 the analysis of transit passengers and crew visiting Baltic ports during the 2013 cruise season the average spending per passenger or crew was as follows:

- Transit passengers visiting Baltic ports spent an average of €76.74 in each port with tours and retail shopping accounting for 80% of their expenditures.
- Crew visiting these ports spent an average of €25.97 with food and beverages, entertainment and retail shopping accounting for 73% of their expenditures.
- Average expenditures by turnaround passengers at the Baltic turnaround ports indicate that the average passenger spends €152 per visit.
- Average turnaround passenger spent €115.35 on lodging and food and beverages, which was 75% of total turnaround passengers expenditures.

Total expenditures of passengers and crew totalled €346 million in 2013. Turnaround passengers accounted for 24% of the total with transit passengers accounting for another 71% and crew 5%. More details showing passenger and crew spending are in the table below.

Tabl. 8. Baltic Cruise Ports – Average Expenditure per Passenger/Crew

## Common standards...

Category	Average Expenditure per Passenger/Crew in €		
	Turnaround	Transit	Crew
<b>Total</b>	<b>152.23</b>	<b>76.74</b>	<b>25.97</b>
<b>F&amp;B&amp;Entertainment</b>	<b>52.39</b>	<b>5.54</b>	<b>8.07</b>
<b>Tours &amp; Ground Transportation</b>	<b>14.94</b>	<b>43.75</b>	<b>2.54</b>
<b>Retail Goods</b>	<b>12.68</b>	<b>17.88</b>	<b>10.97</b>
<b>Other Purchases</b>	<b>9.26</b>	<b>9.57</b>	<b>4.39</b>
<b>Accommodation</b>	<b>62.96</b>	-	-

Source: Overview Economic Impact of Cruise Tourism Baltic Sea Region. Peter Wild for BREA and G. P. Wild (International) Limited

Passengers and crew spent €151 million on tours and other ground transportation, accounting for 44% of total expenditures. Expenditures for lodging and food and beverages totalled €85.3 million. Turnaround passengers accounted for 71% of these expenditures. Purchases of retail goods totalled €71.5 million and accounted for 21% of total spending by passengers and crew.

Tabl. 9. Baltic Cruise Ports – Total Expenditures € Million

Category	Total Expenditure in € Million			
	Total	Turnaround	Transit	Crew
<b>Total</b>	<b>346.50</b>	<b>82.29</b>	<b>247.92</b>	<b>16.29</b>
<b>F&amp;B&amp;Entertainment</b>	51.27	28.32	17.89	5.06
<b>Tours &amp; Ground Transportation</b>	151.01	8.07	141.34	1.59
<b>Retail Goods</b>	71.50	6.86	57.76	6.88
<b>Other Purchases</b>	38.69	5.01	30.93	2.76
<b>Accommodation</b>	34.03	34.,3	-	-

Source: Overview Economic Impact of Cruise Tourism Baltic Sea Region. Peter Wild for BREA and G. P. Wild (International) Limited

Cruise lines spent an estimated €339.4 million throughout the region as a result of the cruise calls at the Baltic ports. These included:

Spending for provisions, hotel supplies, fuel and equipment used onboard the cruise ships. Spending in the manufacturing sector totalled €176.4 million, 52% of the total. These expenditures were concentrated in the food processing, petroleum and the machinery industries. Another €85.6 million, 25% of the total, was spent in the transportation and utilities sector. These expenditures were comprised primarily of port fees.

Tabl. 10. Economic impact of cruise spending 2013 – Baltic Cruise Ports

## Common standards...

Industry	Total Expenditures - €Million
<b>Total</b>	<b>339.37</b>
Manufacturing	176.39
Wholesale & Retail Trade	35.66
Transport & Utilities	85,61
All Others	41.71

Source: Overview Economic Impact of Cruise Tourism Baltic Sea Region. Peter Wild for BREA and G. P. Wild (International) Limited

The €685.9 million in spending by the cruise lines and their passengers and crew generated an estimated 6,155 direct jobs and €161.3 million in compensation throughout the Baltic Sea Region. Of these the transportation sector, primarily tour operators and cruise ports, had the highest direct economic impact with 1,856 jobs and €56.7 million in compensation. The hospitality sector (hotels, restaurants, bars) had the second highest direct employment impact with 1,464 jobs paying €28.2 million in compensation. The manufacturing sector had the second highest direct compensation impact with €41.9 million from 1,365 jobs.

Tabl. 11. Direct economic impact of cruise industry throughout the Baltic Sea Region

Industry	Direct Expenditures €Million	Direct Employment	Direct Compensation €Million
<b>Total</b>	<b>685.87</b>	<b>6,155</b>	<b>161.31</b>
Manufacturing	176.36	1,365	41.91
Whole Sale & Retail Trade	145.85	1,019	24.13
Transportation and Utilities	236.62	1,856	59.69
Hospitality	85.30	1,464	28.15
All Others	41.71	457	7.43

Source: Overview Economic Impact of Cruise Tourism Baltic Sea Region. Peter Wild for BREA and G. P. Wild (International) Limited

The €685.9 million in spending by the cruise lines and their passengers and crew generated an estimated €1.4 billion in total (both direct & indirect) output throughout the Baltic Sea Region:

This output generated 11,987 jobs throughout the region paying €305.2 million in compensation. Because the direct impacts account for about half of the total impacts, the total impacts remain concentrated (just over 50% in the trade, transportation and hospitality sectors). However, the indirect impacts do spread into other sectors, including manufacturing, business and financial services, etc.

Tabl. 12. Cruise Industry total economic impact in the Baltic Sea Region

## Common standards...

Industry	Total Output €Million	Total Employment	Total Compensation €Million
<b>Total</b>	<b>1,422.72</b>	<b>11,987</b>	<b>305.17</b>
Manufacturing	299.86	1,922	60.69
Whole Sale & Retail Trade	119.51	1,886	43.90
Transportation and Utilities	511.59	3,304	91.15
Hospitality	81.50	1,611	26.94
Financial & Business Services	212.62	1,918	51.12
All Others	197.64	1,346	32.37

Source: *Overview Economic Impact of Cruise Tourism Baltic Sea Region*. Peter Wild for BREA and G. P. Wild (International) Limited

In addition other major highlights of the total economic impacts indicate that every €1 million in cruise related spending generated 17.5 jobs throughout the Baltic Sea Region. On average each of these jobs paid €25,500 in employee compensation. The trade, transportation and hospitality sectors accounted for about 70% of the direct impacts. The manufacturing, financial, business and personal services sectors accounted for approximately 60% of the indirect impacts. Every 100 direct jobs generated by passenger and crew spending resulted in another 95 jobs elsewhere in the Baltic Sea Region.

Total employment Impact throughout the Baltic Sea Region in 2013 was 11,987 and by industry it was as follow:

Manufacturing	1,922 (16%)
Whole Sale & Retail Trade	1,886 (16%)
Transportation and Utilities	3,304 (28%)
Hospitality	1,611 9 (13%)
Financial & Business Services	1,918 (16%)
All Others	1,346 (11%)

The jobs generated in the visitor industry/tourism sector (for example, hotels, restaurants, etc.) are in practice estimated based on a survey of adequate number of passengers and crew. Of particular interest is the total number of passengers per vessel call, the percentage of those passengers arriving by air as well as the percentage that stay in local hotels prior to or after the homeport cruise, as well as the purchases made by the passengers in the local economy. These purchases include expenditures on hotels for embarking and debarking passengers, as well as local purchases for retail items, food and local landside tours. The average expenditures on hotel lodging and nights stayed pre- and post-cruise, as well as food and in-town taxis are being placed into the visitor industry model.

## 4 Regional economic effects of cruise tourism

### 4.1 Factors determining the cruise terminal location

Cruise ports come into three main categories depending of the role they serve within their regions<sup>40</sup>:

- Destination cruise port - the cruise terminal and its immediate area essentially act as a tourist bubble. In some cases there may be safety and security issues outside the port area.
- Gateway cruise port - cruise port act as technical stop since they offer no significant cultural or physical amenities, but are used because they are servicing a major touristic destination (like Civitavecchia is the gateway to Rome).
- Balanced cruise port - the port can be a destination, but excursions are also available, the balance varies according to what each port and its region has to offer.

There has been a growing number of hub ports where passengers in whole and in part can begin or end their journey and partial itineraries and dedicated facilities may be included.

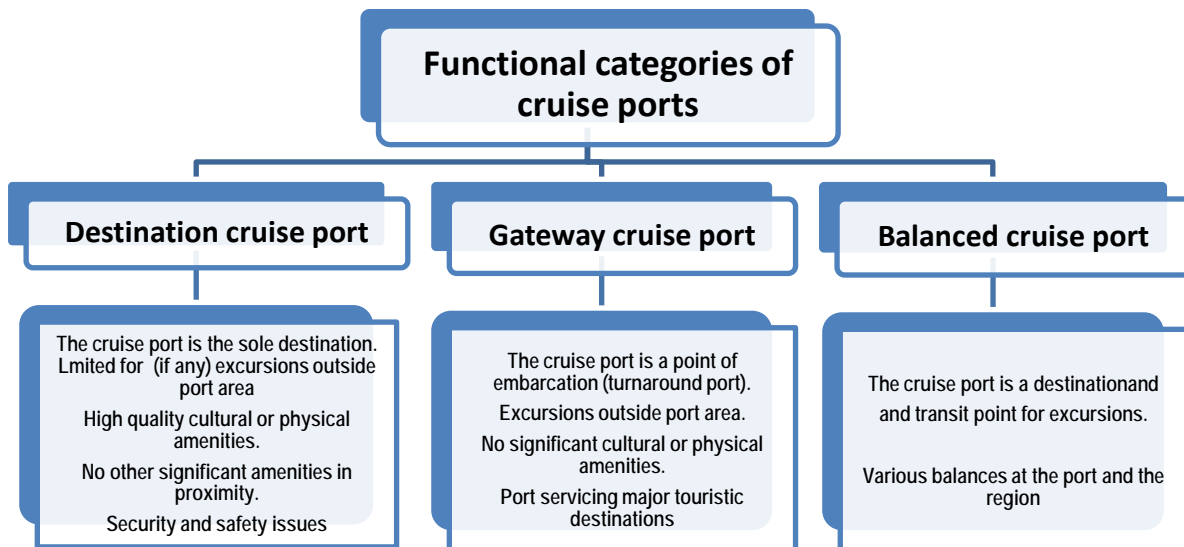


Fig. 14. Functional categories of cruise ports

Source: Economic and Law Department. Maritime Institute in Gdansk

Cruise companies favour new port facilities, with amenities and infrastructure customized specifically for cruise ships, however, ports can become involved through adaptation of existing facilities. Least cost solutions may involve tendering to existing municipal docks, use or minor adaptation of existing

<sup>40</sup> Juan Gabriel Brida, Sandra Zapata: Cruise tourism: economic, socio-cultural and environmental impacts. Page 205-206

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cargo docks. As the destination becomes more popular, pressure to renovate or create new cruise docks is likely to occur.

Tabl. 13. Factors determining locations of cruise facilities

Location considerations	Benefits		
	Marketing	Logistics	Guests experience
Navigational access	✓	✓	
Security	✓	✓	✓
Congestion Cruise Area vs Cargo		✓	✓
Traffic & Access	✓	✓	✓
Ease of Ingress & Egress	✓		✓
Expansion Potential	✓	✓	
Proximity to Parking		✓	✓
Exposure	✓		✓
Desired to work with Cruise Line	✓	✓	✓

Source: *Decision Criteria for Cruise Port Selection in the North Sea Region Cruise Gateway North Sea – Work Package 3 Study*

Infrastructural limits can be changed by investment. Destinations need to consider whether they have sufficient assurance that the port or attraction will continue. Cruise lines often change ports for security, economic or visitor satisfaction reasons, and major facilities or services may be left unused.

In many ports where cruise ship callings have increased, public and private investments have been dedicated 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 (Hamburg, Bergen, Antwerp).<sup>41</sup> With many cruise terminals located close to historical city centers, cruise ship activity provide jobs linked to bars, restaurants, convenience shops, etc. Increased tourism 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 tourism expenditures.

Main factors considered when choosing destinations by cruise line are<sup>42</sup>:

- Key natural and cultural assets of the port and of sites which can be visited while the ship is in port. Most port visits tend to last from ten to twelve hours on land, therefore sites may be considered as assets for the destination only if they are accessible on tours of eight hours or less. Variety of experiences is important. In some destinations the location of port facilities is important, and

<sup>41</sup> Jean-Paul Rodrigue, Theo Notteboom: The geography of cruises: Itineraries, not destinations *Applied Geography*. journal homepage: [www.elsevier.com/locate/apgeog](http://www.elsevier.com/locate/apgeog). J.-P. Rodrigue, T. Notteboom / *Applied Geography* 38 (2013) 31e42

<sup>42</sup> *Managing Cruise Ship Impacts: Guidelines for Current and Potential Destination Communities. A Backgrounder for Prospective Destination Communities* by Ted Manning, President Tourisk Inc. 2006.

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may be an issue between destination values and those of the cruise line. Docking in town may help town merchants but reduce the ability to sell tours, as visitors walk from the ship.

- Port facilities including accessibility and convenience for those embarking and disembarking. However ships may use tendering to ports where there are no or unsuitable shore facilities, but this is not seen as a good or permanent solution. Sometimes ports invest in fast comfortable tenders in order to mitigate the problem. Nevertheless tendering time means that tourists have less time on shore.
- Location relative to other destinations and departure ports. Most tours favour ports where the entire day can be spent in port, and passage to the next port occurs overnight. Many tourists do not find days at sea as interesting as port days.
- Security - is very important, particularly near the docking facility and in areas where tours or pedestrians may go. Cruise and tour operators may have their own requirements for safety, insurance, site certification, tour and guide certification etc.
- Infrastructure - suitable numbers of buses, guides, police, toilets, parking to handle the tourist numbers considering that some destinations like Bergen or Sankt Petersburg are docking more cruisers at one time.
- Provisioning - for some lines local provisioning of food, drink, clean water is done in tour ports. A growing trend is to carry nearly all goods from the home port, due to the rapid growth of shorter tours, concerns regarding food safety, and economies of scale of provisioning at major ports.
- Port costs – higher dockage fees may result in cruiser shift to another port or even another country. In the past this also was used to avoid environmental regulations, but operators calling EU ports are now party to international standards<sup>43</sup>.
- Marketing – most cruises are marketed as a package of several destinations and experiences. Specific cruises may alter the general formula to sell to a niche market. This is less true of large lines.

One of the services that is scarce in the competition for a space is transport (taxis and tourism buses) because cruise passengers create an artificial large demand only for some particular days. Other space is fought for the informal salespeople (mobile) who also want to benefit from the presence of the cruise passengers.

The above mentioned factors have been taken into consideration in Federal program of Kaliningrad region development, where development of tourism, including construction of cruise terminal in the Port of Kaliningrad. Currently there is lack in condition of Cruise terminal construction in Kaliningrad

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<sup>43</sup> Conservation International, Lighthouse Foundation, and WTO Indicators – Cruise Destinations section

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region, which is struggling from lack of sufficient port infrastructure for modern cruise vessels in region. New facilities are viewed as solution for mitigating isolation of Kaliningrad in terms of accessibility.

### **4.2 Potential jobs generated by cruise industry**

Cruise sector has substantial employment impact related to the port activity through: direct employment impact, induced employment impact, indirect jobs, related user employment impact as well as through related user employment impact and personal earning impact.

Cruise vessels calling a port generate jobs at the level of pilotage, tugs, provisions, fuel, crew shore leave, passenger services, inspections, immigration, hotels, restaurants, local attractions and other tourism activities in the port area. Further employment is provided by inland transportation involving cruise passengers including air, private car, bus, transit and taxi. Yet, the benefits of cruise ports for local economies can be controversial, particularly in light of the revenue capture strategies pursued by cruise lines that may leave less than expected impacts and infrastructural and environmental burdens.

An example of economic employment impacts generated by the port based on Port of Bergen reveals (FTE) full time economic effect – jobs and tax income for 11 municipalities for all port, not cruise separately:

- 181 FTEs directly related to the port activities,
- 1 367 FTEs indirectly involved
- 600 induced FTEs
- 149 FTEs in total

The economic impact totalled NOK 406 million, including: direct tax income NOK 208 million, indirect tax income NOK 136 million and induced tax income NOK 62 millioner

The methodology used for the above calculation was based on a scientific and objective approach to measure the direct, indirect and induced economic effects of ports in relation to the hinterland i.e. the state/region and/or the municipality in which the port is located. The methodology is based on the economic theory of multiplier effects where not only the direct spending are measured but also how these spending circulate and are induced in the economic system<sup>44</sup>.

In ports where cruise ship operations are not considered as priority activities and where there are no dedicated passenger terminals, generally no additional workplaces are created. Analyses of Port of Hamburg activities contain quite detailed information about the size of employment and revenue from the various types of activity, but no revenue from cruise operations is recorded. Traditionally, dedicated passenger terminals belong to the operators of the cruise fleet and are not included in the port activity analyses, as are traditional transshipment, storage and logistics services and investments in basic port infrastructure and facilities. In the case of the port of Hamburg the gross value added of the cruise industry was €383 million in 2013 and €411 million in 2014, which made 3,3% of total Port of Hamburg activity. In addition the gross value added in 2014 at regional and national level was

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<sup>44</sup> Information from GreenCruisePort partner – Port of Bergen



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€452 million and €658 million accordingly.<sup>45</sup> The Port of Hamburg provided in 2014 a total of 129761 jobs, including 10.9% in port management, 59% directly linked to port management and 41% indirectly<sup>46</sup>. Total employment in cruise industry in the Port of Hamburg in 2014 was 3.977 of which 1834 in direct jobs and 2.142 indirect jobs.

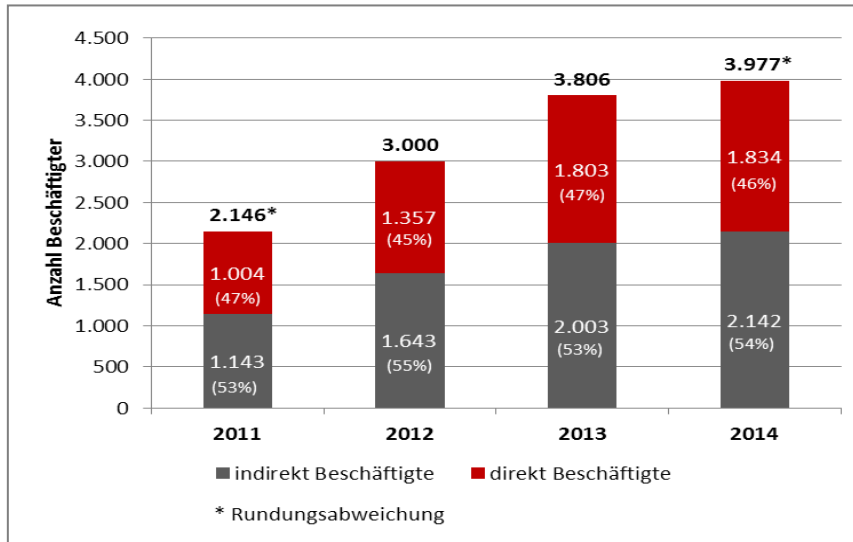


Fig. 15. Direct and indirect Employees in Cruise industry in Hamburg

Source: PLANCO Consulting GmbH (2015): Fortschreibung der Berechnung zur regional- und gesamtwirtschaftlichen Bedeutung des Hamburger Hafens für das Jahr 2014.

In Italy, which is still the major centre for cruise activity in Europe and participates in all aspects of the industry from shipbuilding, to crewing, to serving as a destination market<sup>47</sup>, the €4.45 billion in direct cruise tourism expenditures in 2011 generated an estimated 100,089 jobs (direct, indirect and induced). The 42,235 direct jobs, including the employees of the cruise lines, the direct suppliers to the cruise lines and the employees of those establishments that provide goods and services to cruise passengers, that were generated by cruise-related expenditures paid €1.33 billion in employee compensation.

Tabl. 14. Direct cruise industry employment impacts in Italy in 2011.

<sup>45</sup> Information from GreenCruisePort partner – Port of Hamburg

<sup>46</sup> Fortschreibung der Berechnungen zur regional- und gesamtwirtschaftlichen Bedeutung des Hamburger Hafens für das Jahr 2014. PLANCO Consulting GmbH, Essen, December 2015.

<sup>47</sup> Contribution of Cruise Tourism to the Economies of Europe 2011 Country Report, Italy. The European Cruise Council Euroyards July 2012

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Sector	Number of employees	Compensation in € million	Remarks
Italian manufacturers	12,856	420	30% of the direct jobs, 32% of the direct compensation impacts
Italian shipyards	8,332	271	construction of new cruise ships and refurbishment and repair of existing ships, 65% of the direct manufacturing impacts
Food, beverages & tobacco industry	639	19	produce fabricated metal products, such as tanks and other sheet metal products, computers, material handling equipment, engine parts and communication equipment used in offices and cruise ships
Metals and machinery industries	2,378	77	including furniture and medical equipment.
Manufacture of other durable goods	700	21	8% of the direct employment impacts
Wholesale and retail trade sector	3,345	43	
Transportation and utilities sector	17,900	640	These included employees of the cruise lines, lorry drivers who deliver goods to cruise ships, and tour operators that provide onshore excursions for cruise passengers. Also included are employees in the power generation and communication industries  42% of the total direct jobs, in support of the cruise industry,  47% of the direct compensation impacts
Financial and business service providers	3,387	98	These included employees of insurance companies and agencies, advertising and market research firms, computer programming companies, engineering and management consulting firms, law firms and accounting agencies.
Hotels, restaurants and amusement enterprises	2,147	39	Direct result of passenger spending as part of their cruise vacations
All other sectors	2,569	90	Jobs generated elsewhere in the Italian economy, principally personal services and government, including photographers, health care employees and social service providers among others.

Source: *Contribution of Cruise Tourism to the Economies of Europe 2011 Country Report, Italy. The European Cruise Council Euroyards, July 2012*

In Italy approximately 22 jobs were generated for every €1 million in direct cruise industry expenditures. Furthermore, the average job generated by the cruise industry paid nearly €30,400 in employee compensation. Given the direct impacts of 42,235 jobs and €1.33 billion in employee

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compensation, the effective economic multipliers for the cruise industry in Italy were 2.37 for employment and 2.29 for compensation<sup>48</sup>.

In Spain the €1.19 billion in direct cruise tourism expenditures during 2010 generated an estimated 25,220 jobs (direct, indirect and induced)<sup>49</sup>. The workers who held these jobs earned €764 million in employee compensation. Manufacturers in Spain employed around 4,000 workers, and paid them €120 million in wages and benefits. Cruise lines spent an estimated €31 million on compensation for employees who resided in Spain during 2010. The cruise lines employed approximately 1,100 residents of Spain in their administrative offices and as crew onboard their ships. The 10,636 direct jobs that were generated by cruise-related expenditures paid €344 million in employee compensation. An estimated 14,584 indirect and induced jobs were generated throughout Spain by the cruise industry in 2010. These jobs generated €420 million in employee compensation.

In Spain just over 21 jobs were generated for every €1 million in direct cruise industry expenditures. Furthermore, the average job generated by the cruise industry paid just over €30,000 in employee compensation. With the direct impacts of 10,636 jobs and €344 million in employee compensation, the effective economic multipliers for the cruise industry in Spain were 2.37 for employment and 2.22 for compensation<sup>50</sup>.

The €2.83 billion in direct cruise tourism expenditures in the UK during 2011 generated an estimated 63,834 jobs (direct, indirect and induced). The 29,820 direct jobs that were generated by cruise-related expenditures paid €1,045 million in employee compensation. Manufacturers in the UK employed an estimated 14,028 workers, and paid them €555 million in wages and benefits. Moreover an estimated 30,414 indirect and induced jobs were generated throughout the UK by the cruise industry in 2011. These jobs generated €1.16 billion in employee compensation. The indirect and induced impacts of cruise industry spending generated just over 9,400 jobs within the Manufacturing sector during 2011, impacted manufacturing employees were paid an estimated €368 million in compensation. The cruise lines employed nearly 14,500 residents of the UK in their administrative offices and as crew onboard their ships.

These jobs included the employees of the cruise lines, the direct suppliers to the cruise lines and the employees of those establishments that provide goods and services to cruise passengers.

In 2011 in the UK just under 23 jobs were generated for every €1 million in direct cruise industry expenditures. Furthermore, the average job generated by the cruise industry paid slightly more than €36,500 in employee compensation. Given the direct impacts of 29,820 jobs and €1,045 million in employee compensation, the effective economic multipliers for the cruise industry in the UK were 2.14 for employment and 2.23 for compensation.

The sectoral distribution of direct impact is characterized by a remarkable concentration in a few sectors. For example in Barcelona, full-time jobs generated by cruise activity totalled 6,759, of which

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<sup>48</sup> Contribution of Cruise Tourism to the Economies of Europe 2011 Country Report, Italy. The European Cruise Council Euroyards July 2012

<sup>49</sup> Contribution of Cruise Tourism to the Economies of Europe 2010 Country Report, Spain. The European Cruise Council September 2011

<sup>50</sup> WTO Indicators of Sustainable Development for Tourism Destinations: A Guidebook for greater details.

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3,995 were in the five tourist branches (hotels, restaurants, retail, land transport and travel agencies and tour operators). In other sectors 2,764 jobs were generated mainly in the areas of storage and related activities for transportation, food manufacturing, metallurgy, chemical industry, services, waste management and sanitation, or medical services.

### **4.3 Passengers' behaviour**

There is an increasing interest in the economic and environmental impact of cruise ship tourism, but relatively little consideration is given to the community impact or culture as a resource that requires sustainable management practices. Cruise passengers represent a wide spectrum of interests, travel styles and expectations. Overall, passengers seek port destinations which have a good climate, access to an area possessing either a landmark of historical importance or an exotic or foreign culture. The general thought in the city is that passengers spend minimal money on-shore, rarely purchasing meals or drinks and taking photographs of postcards instead of buying them.

There is a relationship between tourism and transport. Time spent in a destination area seems to be the most influential criterion shaping tourist behaviour because it can directly constrain or expand the number and range of potential activities available and the depth at which individual activities can be experienced<sup>51</sup>. The total destination time is usually fixed well in advance of arrival. Decisions on expenditure often involve a trade-off between transit time and time spent at an attraction or place. Some tourists see time in an opportunity/cost framework, where greater transit time leaves less available at the desired objective. These tourists seek to maximize time spent at a place by minimizing transit time. They prefer to follow the most direct routes. Others see transit time as a commodity that generates benefits in its own right. These tourists are finding value in the journey as much the objective. They are more likely to engage in sightseeing, take indirect routes, and travel to outlying areas to explore a destination more widely. Main tourists have greater destination knowledge and make a stronger psychological investment in its overall role in providing a satisfying trip. Stopover tourists, on the other hand, tend to restrict themselves to visiting convenience-based attractions in well-known nodes or along main transportation corridors. Also differences were noted between first timers and repeaters, who prefer more social activities such as shopping, dining, and visiting friends and relatives<sup>52</sup>.

To investigate cruise embarking passengers' characteristics, preferences, perceptions and expenditure, a non-parametric and a parametric approach are used. It is important to distinguish between the behaviour of the passengers who are either at the beginning of their trip or are calling in the destination within the cruise trip. Cruise passengers making a short stop are visitors of a port of call. During their short visit, cruisers have the opportunity to visit the main attractions of the destination, to do some shopping, take land tours and enjoy other activities. The findings from various investigations show that factors such as the city's attractions and the overall visit experience are the most important determinants of the intention to return and to recommend the destination to friends and relatives. Passengers beginning their trip at a destination are expected to behave in a

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<sup>51</sup> Alan Lew at al MODELING TOURIST MOVEMENTS. A Local Destination Analysis. *Annals of Tourism Research*, Vol. 33, No. 2, pp. 403–423, 2006

<sup>52</sup> Alan Lew at al MODELING TOURIST MOVEMENTS. A Local Destination Analysis. *Annals of Tourism Research*, Vol. 33, No. 2, pp. 403–423, 2006

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remarkably different manner. This type of passenger is more likely to be in contact with the local population, as they use local tourism infrastructure such as: lodging, food and beverages, transport and entertainment.

Passengers' behaviour is a concern for all destinations. To some extent cruise tourism can reinforce some of the behavioural issues. Because cruise tourism is in many ways day tourism, the impacts of large numbers of tourists can be concentrated in a few places in a short time period. Cruise ship excursionists are less likely than stay over ecotourists to be sensitive to the environmental consequences of their actions. Several factors associated with cruise ship excursionists, including their focus on a few sensitive sites, clustering and crowding, litter, and loss of ground vegetation, soil erosion and damage to trees in sites targeted by tours. High visitor numbers disguise lower numbers of visitor days, due to the concentration of visits on a few days.

Ships may visit many countries on a trip, but few tourists have the interest or incentive to learn much about a destination culture or ecosystem they will only visit for a day or a few hours. Tourists in large groups do not behave like they do at home, hence excessive drinking, loud behaviour, showing off behaviours which may be completely out of character with their normal behaviour at home where there is community peer pressure and the norms are known. This can result in offence to local communities, destruction of ecosystems unless controlled and managed by guides and coordinators.

Cruise tourism is in many ways day tourism, therefore the impacts of large numbers of tourists can be concentrated in a few places in a short time period. Significant numbers of tourists can be insensitive to the host community and its ecosystems. Often few tourists have the interest or incentive to learn much about a destination culture or ecosystem they will only visit for a day or a few hours.

A passenger's decision to cruise is based on many factors such as whether to go on a cruise in the first place, where to go, the choice of cruise line and the choice of ship. That decision can be motivated by such diverse factors as a desire to return to a familiar destination, own research; the influence of friends, family and travel agents, brand loyalty to a cruise line, or even preference for a particular ship. The port experience may be influenced by an apprehension due to not knowing the local language, fear of becoming lost, and fear of crime<sup>53</sup>.

Cruise destinations must both understand and address these factors in order to attract not only cruise passengers but also the type of passenger who will make a positive economic contribution to the destination. Otherwise, the destination may not attract passengers who spend very little whilst onshore.

CLIA Australia reported recently that the average international cruise passenger spends over \$200 per day on shore excursions in Cairns. This is 66% higher than the amount reportedly spent by an average domestic passenger. The average international passenger reportedly spends \$98 per day on retail shopping, nearly five times the average spent by either domestic cruise passengers or land-based, domestic tourists to the region. Though CLIA Australia's figures cannot be independently

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<sup>53</sup> Reiner Jaakson BEYOND THE TOURIST BUBBLE? Cruiseship Passengers in Port. *Annals of Tourism Research*, Vol. 31, No. 1, pp. 44–60, 2004

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verified, the results suggest that cruise tourism targeting international passengers would be substantially more profitable to shore excursion and retail operators in Cairns than domestic (coastal) cruise tourism<sup>54</sup>.

Cruise passengers on the average spend less money at the destination. The restricted land time allowed for passengers limit their opportunities to spend money at the visited destination and thus functions as an encouragement for tourists to spend their money on board. Typically about 20–40% of passengers do not even leave the ship while at port. Compared to the land based tourism sector, revenues generated by cruise passengers are considerably lower. Particularly since other tourists tend to stay longer and thus seek accommodation and food at the destination. This in turn creates jobs and tax incomes for local communities. However, cruise tourists overestimate their expenditures to a larger degree than other tourists do<sup>55</sup>.

Location assessed within the scope of the natural quality dimension of destination quality refers to accessibility and distance of the destination. Some of investigations discovered that hospitality and customer care factors are considered important to British visitors, whilst German visitors consider accommodation services as most important as destination quality<sup>56</sup>.

Although cruise ships make regular port stops, many passengers prefer to stay on board during a port visit. These tourists do not benefit the local economy or sufficiently experience the destination but at the same time, cruise tourism is criticized for passenger's pollution and traffic congestion due to the scale of visitation.

Motivation for cruise trip considered by tourists as extremely important<sup>57</sup>:

- Discovering new places
- Experiencing different cultures and ways of life
- Visiting historical and cultural sites
- Enjoying a variety of nature and scenery
- Learning about the Greek history
- Experiencing pleasant climate/temperature
- Getting away from demands of everyday life
- Buying local crafts and handiwork
- Practicing shopping

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<sup>54</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas1\* under the supervision of Natalie Stoeckl1, 2 for The Australian Marine Conservation Society and WWF-Australia, April, 2015

<sup>55</sup> Svein Larsen a,b, Katharina Wolff a, Einar Marnburg b, Torvald Øgaard b; Cruise line passengers' expenditures. *Tourism Management Perspectives*, Volume 6, April 2013, Pages 142-148, journal homepage: [www.elsevier.com/locate/tmp](http://www.elsevier.com/locate/tmp)

<sup>56</sup> Cevat Tosunan, Bekir Bora Dedeoğlub, Alan Fyallc Destination service quality, affective image and revisit intention: The moderating role of past experience. *Journal of Destination Marketing & Management*, November 2015

<sup>57</sup> Andriotis, K. and Agiomirgianakis, G. (2010). Cruise Visitors' Experience in a Mediterranean Port of Call. *International Journal of Tourism Research*, 12(4): 390-404.

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Satisfaction statements of cruise tourists obtained in one of the surveys were as follows<sup>58</sup>:

- Feelings of personal safety and security
- Friendliness of local residents
- Quality of offered services
- Transportation while in destination
- Level of hygiene and sanitation
- Cleanliness of the local port
- Level of language communication
- Availability of facilities and services at port
- Availability of written material in visitors language
- Value for money
- Environmental quality
- Time availability to use comfort facilities and shop

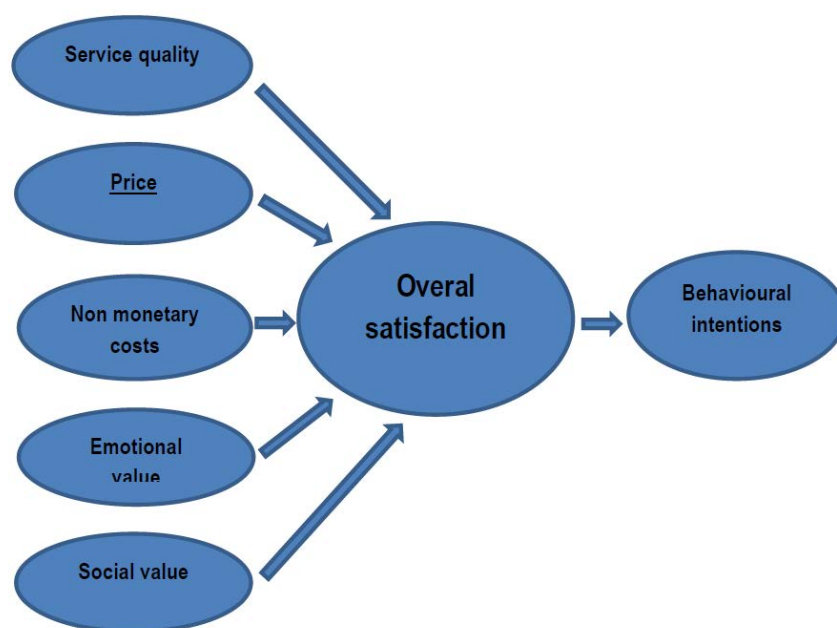


Fig. 16. The proposed structural model

*Source: Economics and Law Department, Maritime Institute in Gdansk*

Budgets alone cannot fully explain variations in travel patterns. Also personality influences behaviour. Special interest tourists are more purposeful and directed in their actions and more willing to visit lower-order attractions. They also spent more time at each place visited. Organized groups are more restricted in their choice of transportation mode, destinations visited, expressions of interest, and time budget allocations. The sociocultural background of tourists also appears to have an influence. Tourists from culturally proximate source markets are seeking different

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<sup>58</sup> Andriotis, K. and Agiomirgianakis, G. (2010). Cruise Visitors' Experience in a Mediterranean Port of Call. *International Journal of Tourism Research*, 12(4): 390-404.

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attractions and traveling to different areas within a destination than those from culturally distant origins.

The tourist's ability to understand a destination and choose what activities to pursue is highly individualistic, though subject to considerable external influence. Tourists feel obliged to visit primary attractions even if they are located in relatively out of the way places.

German passengers predominantly purchase cruises from German national brands, approximately one third of German passengers cruise on ships of the other major European and North American cruise brands. European destinations dominate the cruise itineraries purchased by the passengers sourced from Germany, accounting for about 80% of all German passengers. German national and international cruise brands sourced 1.77 million German nationals (15,633,110 cruise nights) during 2014. Average length of cruise journey was 8.83 days, gross average net revenue per passenger was €1,530 and average net revenue per night €173,37<sup>59</sup>.

From a holistic perspective, destination quality includes not only physical products but also services. Destination image perceptions and revisit intentions differ according to whether a tourists are first-timer or repeat visitor. Destination image can be defined as both the total effect of a destination on tourists and their perceptions regarding a destination's properties. Perceived service quality, which is based on tourists' actual travel experience, is significant in the formation of image. Image based on selected overall impressions plays an important role in people's travel decisions.

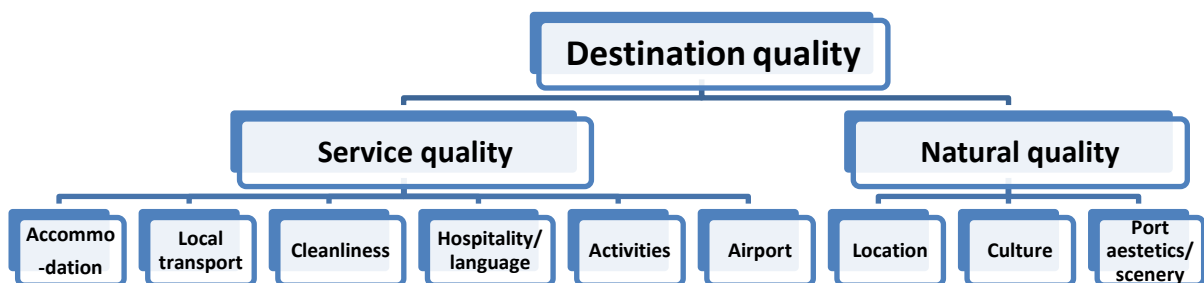


Fig. 17. Conceptual framework of destination quality.

Source: C. Tosun et al./Journal of Destination Marketing&Management 4(2015)222–23

Shopping is a mainstay activity for cruise passengers. Many passengers will spend their entire port call shopping, whilst others will shop as part of their shore excursions or other activities. A welcoming retail environment is particularly necessary in order to encourage passengers to spend money onshore. Closely allied to shopping is restaurants and cafés activity, especially among those passengers who seek to experience the local cuisine at any cost. Also, there are different national and cultural characteristics of visiting passengers.

Cruise ship passengers tend to arrive in large numbers, all at once. In some ports, several ships may arrive almost simultaneously. Generally, cruise ships try to arrive early in the morning in a port, and leave between late afternoon and midnight. In ports where a ship is docking near the city centre,

<sup>59</sup> German Ocean Cruise Market 2015, CLIA Deutschland, prepared by BREA



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many tourists choose to walk around the town and market areas. Those taking short tours may also have the opportunity to do more than one experience. In ports where a ship has to use tenders to take passengers ashore, or docks some distance from a town or commercial centre, there may be little opportunity to shop or interact with locals, unless this is provided on a tour leaving from dockside. Often those taking tours will have nearly no opportunity to spend money in the destination.

Social impacts include increased contact with foreigners who may have different customs, behaviours than local residents. Noise, occupation of spaces (churches, restaurants, parks, beaches etc.) which were previously the exclusive use of the local community will occur. Cruise ship environmental impacts are of two types: those associated with ship operations and those associated with tourist activities. There are guidelines created for ship operations which are a key point of reference for control of damage from e.g. emissions, anchors, waste disposal, oil spills etc. Most major cruise lines subscribe to these guidelines, and in some jurisdictions there is strict enforcement.

In recent years there have been numerous surveys and analysis focused on cruise tourist behaviour aspects including: satisfaction with cruise experience (i.e. shore services, residents attitude, cruise passenger expenditures, return as land tourists). The example of survey results for the port of Riga indicate that: average time (hours) spent by cruise tourists in the city of Riga was nearly 5 hours (4,94) including tourists from Germany – 5,11, Northern countries – 5,55, UK and Ireland – 4,31, other European countries – 5,53, North America – 4,5.

Tabl. 15. Satisfaction of cruise tourists visiting Riga with shore activities  
(scale 1 to 10)

Specification	Germany	Northern countries	UK and Ireland	Other European countries	North America
Initial city welcome	7,76	7,34	8,11	7,48	8,1
Guided tours	5,52	6,67	8,12	7,75	7,94
Historic sites/museums	8,1	7,65	7,95	7,42	7,98
Variety of activities	7,59	7,31	7,47	7,31	7,49
Shopping	7,85	8,08	8,13	7,54	8,1
Friendliness of residents	8,23	8,11	8,57	7,89	8,06
Atmosphere	8,48	8,19	8,49	8,16	8,73
Taxis/local transportation	7,77	7,31	8,15	7,69	7,36
Value for money	8,01	7,64	7,87	7,85	7,66
Overall visit in Riga	8,4	8,11	8,31	7,98	8,48

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*Source: Port of Riga*

It is important to understand how cruise passengers behave at destinations, and to ensure that tourist attractions, facilities and services provided at destination are well managed and not overcrowded, in order to provide a positive experience, since those factors have important implications for destination planning, transport development, planning new attractions or managing the existing ones, and for the management of social, environmental, and cultural impact of cruise tourism at destination.

Gaining feedback from cruise passengers by measuring how well a port of call is doing, can provide guidelines to decision-makers on how to improve the offered product and services, create a positive image and increase the likelihood of return. Visitors who are satisfied beyond expectation are more likely to return to the same destination and recommend it to others.

About three-quarters of all cruise passengers book at least some of their cruises through travel agents. The ship represents in itself the destination, essentially acting as a floating resort (or a theme park) with all the related facilities (bars, restaurants, theatres, casinos, swimming pools, etc.) . While many cruise lines offer basic low cost cruise packages to attract large flows of passengers, they are also seeking ways for more exclusive customers ready to spend more for exceptional experience.

There are some spin-off effects from tourist spending. For some destinations, the investment stimulated by cruise and other visitors can help to create critical mass for some services, those with a tourist focus, enhancing such elements as public safety, range of shops, and availability of health services. At the same time, cruise tourism can be very seasonal, in Northern Europe for example from May to off season in October, depriving locals of both access to services and of employment in the off season.

### **4.4 Value of extended tourism footprint**

The economic impact of seaports has a complex structure. Initial impact generates a number of complex intersectoral relationships, since the intermediate consumption needs of the beneficiary companies in the first instance. A multiplier effect on the entire system, an indirect impact in terms of turnover, gross value added (and wage income) and employment is thus generated. Also the induced impact, of the consumption expenditure made by those workers whose jobs have been generated directly or indirectly due to cruise activity must be considered. The induced impact is also reflected in terms of turnover, gross value added and occupation. The impact generated by cruise activity extends beyond the purely economic sphere it is also in social and environmental implications.

The marine cargo and vessel activity initially generate business revenue to the companies supplying marine services. This revenue is used to purchase employment (direct jobs) to provide the services, to pay stockholders and for retained earnings, and to purchase goods and services from local firms,

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as well as national and international companies, creating indirect jobs with these enterprises<sup>60</sup>. Businesses also pay taxes from the business revenue.

Tabl. 16. Sample list of types of entities that make up the cruise tourism value chain<sup>61</sup>

Entity	Role in cruise tourism	Entity scope	Direct supply goods or services to	Direct procurement goods or services from	Key issues
Cruise passengers	Represent demand for cruise tourism and experience	Global, mainly focused on source market	n/a	Travel agents, cruise lines, ground handlers and excursion operators, ground transportation providers	-Respecting natural and cultural heritage at destination -Creating positive economic impact to host destination -Awareness of responsible travel
Cruise lines	-Central provider of cruise experience -bring passengers to destination -cooperate with potential destination countries	Global or regional companies	Cruise passengers, travel agents, cruise terminals	All other entities within the value chain	-fuel use -waste management -mitigating the impact to marine environment -economic benefits to local economies
Cruise ship crew	Perform operational functions aboard cruise ship at sea and port of call Procure goods and services at port of call/destination	Multinational	Cruise lines	Site amenity operators, ground transportation providers, shipping agencies, site amenity operators	-respecting natural and cultural heritage at destination -creating positive economic impact to destination at destination
Cruise terminals and port operators	Facilities of infrastructure and for operations of cruise ship and passengers at arrival	Local, often owned and operated by government entities or public-private partnership	Cruise lines and passengers	Other third party service providers, site amenity operators	-impact from dredging when developing cruise terminals, from developing permanent jetties -transportation and infrastructure related issues for serving passengers in disembarking and transporting to shore sites
Ground handlers and excursion operators	Responsible for logistic operations providing cruise lines with shore excursion packages	Local – with regional or global affiliations	Cruise lines and passengers, shipping agencies	Ground transportation providers, site attraction operators, site amenity operators	-capacity constraints in cities and visitors flows -responsible operations with respect to environmental and social aspects -responsible behavior of passengers at sites
Airports	Transporting	Global,	Cruise	Destination waste	-adequate lift to match

<sup>60</sup> Sibel Bayar Çağlak and others: The Impact of Seaport Investments on Regional Economics and developments. International Journal of Business and Management Studies vol 3, no 2, 2011 issn: 1309-8047

<sup>61</sup> Sustainable Cruise Tourism Development Strategies – Tackling the Challenges in Itinerary Design in South-East Asia. World Tourism Organization (UNWTO) and Asia-Pacific Tourism Exchange Center (APTEC). Madrid, Spain 2016

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	fly@cruise passengers to destination	regional or local	passengers	management companies and haulers	cruise demand -logistics between airport and cruise terminal -waste minimizing and recycling
Hotels	Accommodation of cruise passengers according to cruise voyage and passenger requirement	Global, regional or local	Cruise passenger, cruise lines	Destination waste management companies and haulers	-suitable design -Efficient resource -responsible travel promotion
Ground transportation providers	Passenger transport within between cruise terminals at destination and hotels, airports, site amenities	Local – with regional or global affiliations	Cruise passengers and crew, ground handlers and excursion providers	Other third party service providers	-Overcrowding of transit infrastructure, fuel use and emissions from operations -Management of waste from management -Mobility of destination port areas and site attractions
Destination waste management companies and haulers	Responsible for waste management and resource recovery for waste materials landed by cruise ships	Global, regional or local	Cruise ships, hotels, airlines, cruise terminals and port operators	Destination waste infrastructure	Proper handling, disposal and resource recovery of landed waste
Site attraction operators	Operate and maintain the attraction facilities and areas visited by cruise passengers	Local	Cruise ships, ground handlers. Cruise passengers	Destination waste infrastructure	-Adequate maintenance -Heritage preservation -Community benefits -Carrying capacity and crowd management
Site amenity operators (retail, food, beverages)	Operate and maintain facilities and areas visited by passengers (restaurants, shopping areas, etc.)	Global, regional or local	Cruise ships, ground handlers. Cruise passengers	Destination waste infrastructure	-Economic multiplier/leakage of cruise passenger revenue -Community benefits from cruise passenger spending -Ethical trade of handicrafts
Host communities	Intangible heritage as part of passenger experience at destination	Local	Cruise passengers, all other value chain entities (employment and business)	Various entities as businesses	-Preservation of traditional way of life -Interaction with visitors -Local economic benefits and cruise passenger spending
Destination management organizations	Promotion of the destination's brand image and visitors experience	Local (government and public entities from tourists business)	Cruise lines, NTOs	Site amenity operators, ground transportation providers, site attraction operators	-Promotion of responsible travel and awareness of natural and cultural heritage
Destination managers and policy makers (ministries, NTOs, tourism boards)	Development of policies and management of operations at destination regarding activities, of cruise lines, passengers, environmental	Local, government or founded from local tourism trade	Cruise lines, ground handlers, cruise terminal operators	Cruise industry media	-Adequate policy to maintain destination -Maximize economic and community benefit -Minimizing environmental and social impacts

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	monitoring and other value chain entities				
Port site agents and handlers	Provide logistic coordination of goods and services procured by cruise passengers and crew	Global or regional companies	Cruise ships	Ship supply storage providers, cruise ship suppliers	-Relationship with cruise line preferred procurement
Travel agents	Selling cruise tourism products to cruise passengers	Global, regional or local	Cruise passengers	Cruise lines, ground handlers, inbound tour operators	-Credibility in claims and promotion of cruises experiences -Promoting responsible travel and cruise tourism
Inbound tour operators	Packing and selling cruise tourism products (or packaged products containing cruise and other forms of tourism) to cruise passengers	Global or regional companies	Cruise passengers, travel agents	Cruise lines, ground handlers	-Promoting responsible travel and cruise tourism
Cruise industry associations	Trade associations for cruise ships and terminals	Global or regional	Cruise ships or cruise terminals	n/a	-Promotion of responsible cruise tourism development -Development of resources for members regarding key components of sustainable cruise tourism development and operations
Cruise industry media	Media channels for cruise industry, information, magazines, websites, conferences, seminars	Global or regional	Most of cruise tourism value chain	n/a	-Promotion of responsible cruise tourism development -Development of resources for members regarding key components of sustainable cruise tourism development and operations
Shipyards	Facilities used for building or repairing cruise ships	Local	Cruise ships and cruise terminals	Portside maintenance and repair contractors, destination waste management companies and haulers	-Downstream impacts of waste materials -Environmental management systems (EMS) -Environmental health and safety (EHS) in operations
Ship supply storage facilities	Provide warehousing facilities for supplies and materials sourced by cruise terminals	Local	Ship suppliers, portside agents and handlers	Destination waste management companies and haulers	-Construction of facilities and land use change or environmental impact -EHS in operations
Ship suppliers	Provide goods and services to cruise ships at destination	Global, regional or local	Cruise ships portside agents and handlers	Manufacturers of goods procured by cruise ships	-Responsible procurement
Portside maintenance and repair contractors	Provide maintenance and repair services to cruise ships at destination	Local (with regional or global affiliations)	Cruise ships	Other third party service providers	-EMS and EHS in operation
Destination	Provides landfilling,	Global,	Destination	Other third party	-Adequate waste

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waste infrastructure	innovation, recycling and transferring of waste management	regional or local	waste management companies and haulers	service providers	infrastructure -Responsible resource recovery
Other third party providers	General supply chain of products and services for sell all types of entities within the value chain	Global, regional or local	All (directly or indirectly) depending on type of provider	Other third party service providers	-Respective issues to be identified per entity type

Source: Ying Wang a,1, Kyung-Ae Jung a,1, Gi-Tae Yeo a,\* , Chien-Chang Chou *Selecting a cruise port of call location using the fuzzy-AHP method: A case study in East Asia. Tourism Management 42 (2014), pp 262-270*

The homeport cruise activity mainly affects two sectors of the destination economy, that is the maritime service sector and the tourist service sector. The maritime service sector includes the companies that provide services to the cruise ships while in port, such as: chandlers and other local retailers, and wholesalers that provide ship stores and provisions to be used by passengers and crew; towing services that assist vessels in docking and undocking; pilots, who assist the vessels navigating the channels from the open sea to the docks, stevedoring services and dockworkers including handling baggage and ship supplies; line handling services that are required when a vessel enters into the port; bunkering companies, parking services for the passengers driving from their place of residence to embark on the ship, ground transfers from the airport and hotels to the ship prior to and after the cruise trip.

Industries to benefit from cruise tourism are: transportation (taxis, buses, automobile, boat rentals), tour operators(including organizers, guides) selected attractions located close to the dock, or marketed directly by the ship activities staff and, restaurants and bars not always benefit from visits as passengers return to the ship for meals.

Cruise ships cause municipality expenditures, including tourism information guides, printed maps, toilets, garbage collection and other facility maintenance. The library/culture house, information services, and facilities/grounds management do not receive additional funds to compensate for more use.

The natural sites also have economic importance - in terms of both use and non-use value, but it can be difficult to measure non-use and existence values. The value of such an attraction, if it is free at the point of entry, will not create profit for the local community and instead will be captured by the tourists.

Investment in cruise ports affects either economy or regional developments. Investment of seaport have been increased urban developments with employment and infrastructures opportunities, taking migration, land valuation, technology developments, economic growth, etc.

Port and city shuttles can present logistical and financial issues for cruise lines and the service providers. The basis of provision varies and is a function of whether the cruise line funds the supply of shuttles, whether the passenger pays on a per ticket basis, or whether the destination provides them on a courtesy basis. However, with the provision of free shuttles comes the risk that the service may not be as frequent as the passengers would like. On the other hand, where passengers pay for their use of the shuttle, the expectation is that there will be sufficient capacity and frequency. Either

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the passenger pays, or it costs the cruise company. If the cruise lines are charged, they will rather move out of those ports. The decision about build cruise port facilities need to be balanced between the port companies' willingness to invest in an activity, and the port community's willingness to provide attractive facilities for cruise ships and their passengers<sup>62</sup>.

There have been some analyses of economic impact in destinations conducted for Caribbean and Latin American Ports<sup>63</sup>. Total spending amount was based on 85% of passenger arrivals and 38% crew arrivals. Cruise tourism's direct expenditures totalled \$2.2 billion, passenger visits 17.6 million and 3.2 million crew to 29 destinations generated \$1.7 billion and \$288.7 million, respectively. Average cruise passenger spending per port of call was \$97.26, and average spending per port of call by crew members was \$89.24. Cruise ship carrying 2,550 passengers and 480 crew members generates \$227,088 in passenger and crew expenditures during a single port-of-call visit.<sup>64</sup>

In the survey conducted for the port of Seattle, for example the key findings indicate that on average 82% of the passengers arrive via air, and about 55% spend about 1.7 nights in Seattle area hotels (both post and pre cruise). The typical cruise passenger that stays in area hotels spend about \$94 per night per person in local hotels. For those passengers making local purchases on specific items, on average each passenger spends \$13 in restaurants, \$9 on retail purchases, \$4 on local transportation and \$3 on entertainment and land-side tours. Also included in the visitor industry impacts are the impacts created by crew spending. On average, each crewmember spends an average of \$287 per call at Seattle, the majority of which is spent on restaurant and retail purchases.

Cruise tourism is growing rapidly in recent years causing various impacts on destinations. From the social and economic perspective, the interactions between the different actors of the exchange process related to cruise passengers, crew, residents, and producers of the tourism products can bring both positive and negative consequences.

The cruise ships at destination can negatively affects cross locations, which are invaded by thousands of tourists and are visited in a few hours with organized tours. But it also tends to homologue sites, making them equal to each other: local crafts is replaced by souvenir made in China, the traditional foods from international products, responding to a kind of tourism basically reduced to the "right to see".

Cruise tourism might have limited direct economic effect if provisions are purchased only in home country. In addition it can be a very seasonal business (many shops close after the cruise season). Cruise passengers boarding and/or disembarking have additional expenditure in terms of the use of air links, rail or road transport to get to their destination, as well as increased spending during the pre- and post-cruise: accommodation, catering and consumption of complementary offers.

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<sup>62</sup> Wendy R London, « Economic Risk in the Cruise Sector », Études caribéennes [En ligne], 18 | Avril 2011, mis en ligne le 15 avril 2011, consulté le 19 juin 2017. URL : <http://etudescaribeennes.revues.org/5134> ; DOI : 10.4000/etudescaribeennes.5134

<sup>63</sup> Economic Impact Study conducted by Business Research & Economic Advisors (BREA) – focused on Caribbean and Latin American Ports (2009)

<sup>64</sup> This situation differs from ports as Barcelona and other European destinations, where the number of cruise visitors is small compared with tourists or the number of residents.

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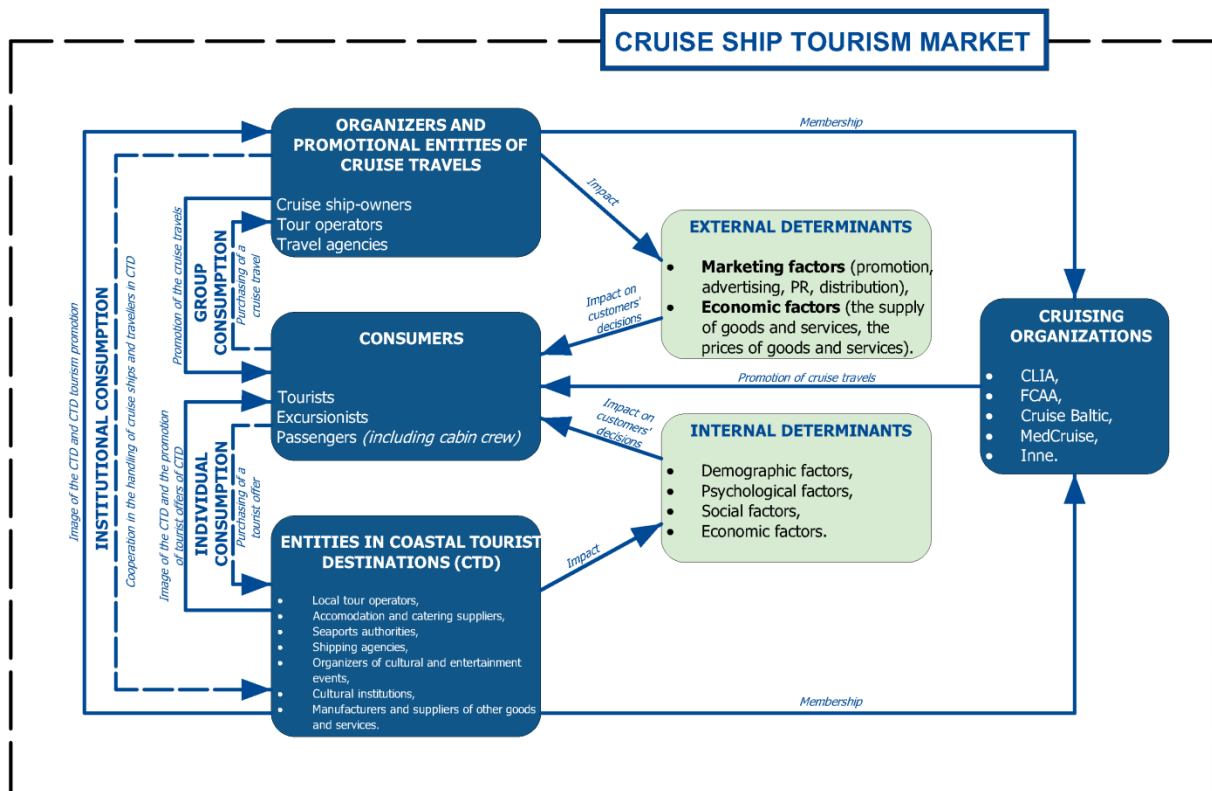


Fig. 18. The model for the development of cruise travellers' consumption in coastal tourist destinations

Recently increased attention has been focused on the social and cultural effects of tourism. Communities are constantly creating and reinventing culture in social processes and these social effects refer to the ways in which tourism contributes to changes in value systems, family relationships, individual behaviour, safety levels, moral conduct, collective lifestyles, creative expressions, traditional ceremonies, and community organisations. The level of satisfaction in a destination depends on the good experience that a tourist has in it. There are series of reactions triggered by the increasing cruise tourism. There is competition for a space in the smaller destinations, where the ratio cruise tourists per resident are large. To support, in a day, more than one mega cruiser with 6-8 thousand passengers, the overcrowding would be imminent and extremely difficult to handle. There might be scarcity of a public service such as transport. In a day with a high presence of cruise passengers, the destination provides 50 buses that bring congestion and pollution, and compete with pedestrian on the roads. Often local residents avoid the central business district while cruise ships are in port.

### 4.5 Port direct and indirect income

Seaports are increased business and employment opportunities (direct and indirect), GNP, land prices etc. with their developments. The economic effects of maritime tourism for both ports and city/region depend on the role of ports in the tourism services market, the quality of infrastructure and accessibility, the traffic volume and the length of the tourist season. In case of ports, revenues from port dues are undoubtedly comparable.



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There is a distinction between a port of call and a port of embarkation. While a port of call is just an intermediate stop, a route to another destination, a homeport is a port where passengers begin and end their cruise, and vessels often take on supplies. Currently, competition for both port of call and homeport business is growing, with worldwide ports promoting themselves either for cruise way calls or for embarking cruise business.

In the case of ports of call, the large flow of cruise passengers can generate an outstanding economic impact on the visited port. Regarding homeports, the total impact for an embarkation port it is generally regarded as higher than that of a port of call, as cruise lines tend to purchase higher levels of goods and services from port suppliers, and passengers potentially stay overnight at local hotels.

In Baltic and Northern European ports, fees charged on the gross tonnage of ships calling at the port are similar in all ports, as are the fees for each passenger. As part of the tonnage fee, the port administration is required to provide a safe berth at the quay and to receive ship's waste.

The ports that have the highest value added levels are mainly in the Mediterranean area.

Tabl. 17. Distribution of cruise tourist spending (in thous €) in Baltic Sea and North Sea basins

Specification	Total expenditure	Total direct value added	Passengers	Crew	Ships
<b>Total</b>	1.872.182	821.957	1.498.980	131.233	241.969
<b>of which:</b>					
<b>Baltic Sea</b>	183.031	73.281	146.700	13.244	23.088
<b>% share in total</b>	9,8	8,9	3,1	10,1	9,5
<b>...North Sea</b>	131.132	58.910	103.520	6.760	20.852

Source: Policy Research Corporation (EU)

In addition to its direct economic impact, cruise tourism also generates an indirect economic impact. For example the intermediate purchases made by a shop owner in a cruise destination create turnover for its suppliers. This turnover leads in turn to intermediate purchases from those supplying the suppliers, payment of wages, et cetera, however it is hard to determine whether this impact is actually generated in the coastal/port regions because a shop owner may buy its goods from a supplier in another country, city or region.

Every cruise ship calling the port has to pay for docking fees, pilot services and other kinds of services, so that the per capita revenue for port- and coast services has its importance.

Public or private port owners are convinced that cruise lines should be paying for using the facilities and services in port. Sometimes the local government inspired by local residents or lobby groups are convinced that the lines should also pay on their passengers behalf for their use of the facilities and resources in the visited area. However, most cruise companies focused on the minimal cost to the destination, regard that apart from being taxed per passenger, they should in fact be paid for

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bringing tourists to destinations, because the tourists will spend money, support jobs and possibly return in the future for a longer stay, providing that the first short cruise visit was satisfying. Often lowering taxes on business leads to increased investment.

An important market issue is who pays who and how much. For example in China cruise lines often are being offered some special deals or incentives. Sometimes costs are lowered at the particular season. For example Aida cruises are determined to have longer season in Northern Europe, however the port costs are much higher than in the Mediterranean, therefore in order to extend the cruise season there should be cuts in port dues of 30%. Generally Cruise Baltic ports are open for negotiation and ready for introducing lower costs for late calls in order to extend the cruise season.

According to surveys of the World Travel and Tourism Council, the average revenue per cruise trip is almost as high as the average receipts per international tourist arrivals. But the distribution of income from cruise industry is not equitable. Most ports obtain small contributions from the use of the port as a cruise destination and cruise tourism provide few real jobs and business opportunities for local residents. Cruise passengers seem to spend less than 30% of the expenditure of a land tourist. Approximately 40% of the bed days sold by the cruise industry are to Caribbean but, according to the World Travel and Tourism Council, 'the economic contribution of cruise tourism to the Caribbean economies is very low.

Moreover, most cruise ships are registered under foreign flags like Bahamas, Panama, or Liberia, thanks to that because cruise lines as foreign corporations, avoid taxation, labour laws, environmental standards, etc. Flags of convenience also restrict the rights of workers and are used to pay low wages.

As ship order books and passengers number grow, so do significant impacts at different levels: socio-cultural, economic, politic and environmental. There are not many surveys concerning the effects of cruising in destinations, particularly those related to cost-benefits analysis of the cruise industry activity. Furthermore, it is uncertain whether major players in the cruise industry (local governments, population, shore operators, etc.) are taking proactive measures to ensure a sustainable future for cruise tourism destinations<sup>65</sup>.

Ports are quick to claim that each cruise passenger spends more than \$100 during a port call, even without any serious argument. From this they simply deduce that a cruise with 4,000 passengers and 2,000 crews generates revenues for \$6,000,000<sup>66</sup>. This believe do not take into account that cruises today are accessible to almost everyone and that some type of cruising must be considered part of the low cost tourism. On average, cruise passengers today have even less income than those who cruised in the 1980s.<sup>67</sup>

The substantial part of income generated by the cruise activities remains to the cruise companies, but ports have still some profits. However, they also have to face costs and problems associated with the arrivals of ships, cruise passengers and crews. This part still lacks reliable surveys.

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<sup>65</sup> Cruise tourism: economic, socio-cultural and environmental impacts,p.207

<sup>66</sup> Cruise tourism: economic, socio-cultural and environmental impacts,p.207

<sup>67</sup> According to Florida-Caribbean Cruise Association study (1994) passengers spent on average \$89.72 per passenger per port in the Caribbean region

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There is a range of vessel-related expenditures, including: port agency fees; storage; terminal charges, water; pilotage, berthing, baggage handling and stevedoring; fuel bunkering; marine engineering; dry-dock charges; waste disposal; and towage. Vessel-related expenditures in these categories tend to be higher at a home port than a port of call. In addition, vessel-related expenditure may include state and federal charges and taxes that vary according to cruise route and ports of call. Support expenditures include, inter alia, the component of shipping agent commissions and marketing expenses paid directly to operators in the port. Cruise line payments for local marketing and travel agent services are substantially higher in the ship's home port than in ports of call. In this case, economic impacts of the seaport can be classified in 4 different ways: direct impact, indirect impact, induced impact, catalytic impact.

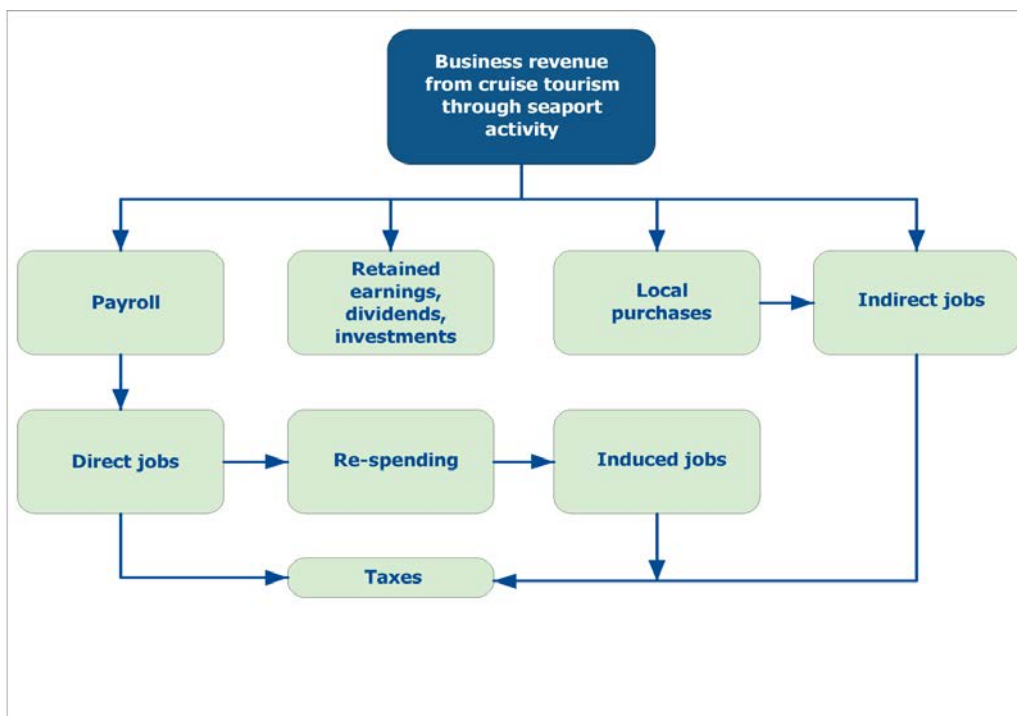


Fig. 19. Flows of Economics Impact Through the Economy<sup>68</sup>

Source: Sibel Bayar Çağlak and others: *The Impact of Seaport Investments on Regional Economics and developments. International Journal of Business and Management Studies vol 3, no 2, 2011 issn: 1309-8047.*

Direct impact is the employment and income generated by the direct construction and operation of the port. Indirect impact is the employment and income generated by the Direct impact is the employment and income generated by the direct construction and operation of the port. Indirect impact is the employment and income generated by the chain of suppliers of goods and services, and the induced impact is the employment and income generated by the spending of incomes by employees created by the direct and indirect effects. Finally, the catalytic impact is the employment and income generated by the role of the port as a driver of productivity growth and then as an attractor of new enterprises.

<sup>68</sup> Sibel Bayar Çağlak and others: *The Impact of Seaport Investments on Regional Economics and developments. International Journal of Business and Management Studies vol 3, no 2, 2011 issn: 1309-8047*

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The direct impact consists of the sum of initial spending by the three agents involved in cruise activity: shipping companies, cruise passengers and crew. The initial direct spending generated by shipping companies includes all goods and services needed when cruise ships dock at a port. The following expenses are included: services provided by shipping agents, services provided by the cruise terminals (luggage, safety, handling, check-in, etc.); services provided by the Port Authority of Barcelona (including taxes and port fees); nautical pilotage and the mooring and unmooring of ships - technical services waste collection and treatment; fuel supply services; food, beverages and drinking water (among other provisions); crew trips and airport charges; medical care for both crew and passengers; and services provided by travel agencies and tour operators.

The initial direct spending by cruise passengers includes spending on trips, visits to museums and other cultural and entertainment activities; accommodation (hotels, hostels and tourist apartments); expenses (restaurants and cafes); various purchases (souvenirs, clothing and footwear, etc.); the city internal transport (including transfers from the airport/train station to the port and vice versa) and airport charges. Finally, direct spending by the crew in the city includes: expenses (restaurants and cafes); various purchases (souvenirs, clothing and footwear, etc.); and internal transport around the city.

The indirect impact is the effect on other sectors of the economy, generated as a result of the goods and services required by the companies that are receiving direct expenditure. For example, for a hotel to accommodate a cruise passenger, it also needs to purchase a set of goods (such as textiles, food products, etc.) and services (cleaning, transportation, etc.). Similarly, companies mooring, and pilot boat, require a range of goods and services to carry out their activity in port based on the cruise companies. In turn, these "second order" providers require goods and services for the development of their activity and so on. Thanks to the impact of the spending by shipping companies, cruise passengers and crew, production in all sectors is increased, thereby generating a multiplier effect throughout all economic sectors.

Ship-related expenditures in an individual port are a product of the ship's needs, which tend to be greater in all categories for larger ships, but also depend on existing supply chain arrangements. Initial direct expenditure made by the crew in the city can be estimated from information provided by the port about the name of the cruise ships that dock at the port, and the technical specifications of these ships, which include, among other information, the number of crew members. Port service and supply agreements are negotiated in light of alternatives available in neighbouring ports that may be incorporated within cruise itineraries. As these itineraries are typically marketed twelve months or more in advance of departure, a ship's procurement flexibility is strictly limited in the short term. With cruise lines not keen to continually renegotiate supply contracts, ports will experience considerable pressure to retain existing business through lower prices and incentives<sup>69</sup>.

Public or private ports need direct or indirect financial support from their local, regional and possibly even national government. The reason for that is basically the fact that some of the key payments applied on visiting cruise ships do not go to the port authority but to other public or private bodies.

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<sup>69</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas1\* under the supervision of Natalie Stoeckl1, 2 for The Australian Marine Conservation Society and WWF-Australia, April, 2015

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Considering that most ports in Europe are publicly owned by quasi-governmental entities, their costs are regulated and often are not motivated by tourism issues. As a result port or tourist bodies are not authorised to decide about lowering costs. Lack of direct control by the port over the price level can cause significant changes in attracting ship calls. For example, Turkey had no cruise tourism until it came up with a fiscally creative way of attracting cruise calls<sup>70</sup>.

Port authorities and port management organizations should evaluate the cruise ship and passenger fees to balance the total cost of port operations, services, maintenance and security appropriately. Proper analysis should be followed by mechanisms to allocate a portion of the fees collected for future restoration of historic areas and maintenance of protected areas.

The homeport cruise activity mainly affects two sectors of the destination economy, that is the maritime service sector and the tourist service sector. The maritime service sector includes the companies that provide services to the cruise ships while in port, such as: chandlers and other local retailers, and wholesalers that provide ship stores and provisions to be used by passengers and crew; towing services that assist vessels in docking and undocking; pilots, who assist the vessels navigating the channels from the open sea to the docks, stevedoring services and dockworkers including handling baggage and ship supplies; line handling services that are required when a vessel enters into the port; bunkering companies, parking services for the passengers driving from their place of residence to embark on the ship, ground transfers from the airport and hotels to the ship prior to and after the cruise trip.

The tourist services sector consists of companies providing services to the passengers and crew of the current cruises prior to and after the cruise ship. Within this category are: local hotels and motels; local taxi drivers, airports, bus or train stations, restaurants/bars; retail goods; entertainment establishments such as ground tours, movies, amusements, etc.

Every cruise ship calling the port has to pay for docking fees, pilot services and other kinds of services, so that the per capita revenue for port- and coast services has its importance.

The initial direct spending generated by shipping companies include all goods and services needed when cruise ships dock at a port, such as: services provided by shipping agents, by the cruise terminals (luggage, safety, handling, check-in, etc.), by the port administration (including taxes and port fees), nautical pilotage and mooring, waste collection and treatment, fuel supply services; food, food and beverages and drinking water, crew trips and airport charges; medical care for both crew and passengers, and services provided by travel agencies and tour operators.

The indirect impact is the effect on other sectors of the economy, generated as a result of the goods and services required by the companies that are receiving direct expenditure. For example, for a hotel to accommodate a cruise passenger, it also needs to purchase a set of goods (such as textiles, food products, etc.) and services (cleaning, transportation, etc.). Similarly, companies mooring, and pilot boat, require a range of goods and services to carry out their activity in port based on the cruise companies. In turn, these "second order" providers require goods and services for the development

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<sup>70</sup> Contribution of Cruise Tourism to the Economies of Europe 2011 Country Report United Kingdom The European Cruise Council July 2012. United Kingdom

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of their activity and so on. Thanks to the impact of the spending by shipping companies, cruise passengers and crew, production in all sectors is increased, thereby generating a multiplier effect throughout all economic sectors.

Example of cruise industry income in the Port of Tallin<sup>71</sup>:

Port dues in Port of Tallin in 2017 are: tonnage charge €0,48/GT, mooring €88/114/134/per operation. Passenger fee is €1,46/passenger. There is discount for 2nd & 3rd call 35%, 4th & 5th call 55%, from 6th call 65% and special agreements for turnarounds.

In the survey 97% respondents reported that they went ashore in Tallinn. The each passenger spent an average of 5.0 hours ashore. The average length of a purchased onshore tour was 4.0 hours. About 54% of the cruise passengers that went ashore purchased a shore excursion. Passengers visiting Tallinn who purchased a tour spent an average of €93 per party or €44.90 per passenger for their tour.

Passengers reported spending another €34.90 per passenger while ashore for other goods. 70% of passengers purchased local crafts and souvenirs at an average price of €16.80 per purchase and a weighted average of €11.71 per passenger visit. Another 60% of the passengers made purchases of food and beverages with an average expenditure of €11.61 per purchase and a weighted average of €6.94 per passenger visit 25% of the passengers made purchases of clothing with an average expenditure of €25.29 per purchase and a weighted average of €6.27 per passenger visit.

The survey revealed that 56% of the crew respondents were going ashore during the current cruise call in Tallinn. Another 40% who did not go ashore during the current call did so at least once in the previous month. The typical crew member spent an average of 2.3 hours ashore. Passengers and crew spent an estimated €26.4 million during 2012

Transit passengers accounted for 95% of the total with crew accounting for the remaining 5%. Passengers and crew spent €12.1 million on tours and other ground transportation, accounting for just over 45% of their total expenditures. Passengers and crew spent another \$10 million on retail items, accounting for 38% of their total expenditures.

Specification	Total Expenditures €		
	Transit	Crew	Total
Category			
F&B & Entertainment	2,123,229	417,295	2,540,525
Tours & Ground Transportation	12,038,974	96,442	12,135,416
Retail Goods	9,462,026	588,541	10,050,567
Other Purchases	1,352,347	295,507	1,647,854

<sup>71</sup> Survey ordered by City of Tallinn and conducted by TNS Emor in 2014 ([www.visittallinn.ee](http://www.visittallinn.ee))

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<b>Total</b>	24,976,578	1,397,785	26,374,363
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Source: Port of Tallin

The €26.4 million in passenger and crew spending generated an estimated 177 direct jobs. The transportation sector (primarily tour operators) had the highest direct employment impact with 63 jobs. The wholesale and retail sector had the second highest direct impact with 32 jobs. The hospitality sector (primarily restaurants and entertainment venues) benefitted from 23 jobs.

The €26.4 million in passenger and crew spending generated an estimated €50.6 million in total (direct + indirect) output throughout Estonia. This output resulted in the employment of 365 residents of Estonia paying €9.07 million in compensation. Because the direct impacts account for about 45% of the total impacts, the total impacts remain concentrated in the trade and transportation sectors. However, the indirect impacts do spread into other sectors, including manufacturing, business and financial services to name a few.

Tabl. 18. Passenger and Crew Spending – 2012

Industry	Total Output € Millions	Total Employment	Total Compensation € Millions
Manufacturing	9.10	37	1.64
Wholesale & Retail Trade	6.60	106	1.77
Transportation & Utilities	21.40	89	2.88
Hospitality	2.60	29	0.63
Financial & Business Services	6.60	69	1.39
All Others	4.30	35	0.76
<b>Total</b>	<b>50.60</b>	<b>365</b>	<b>9.07</b>

Source: Port of Tallinn

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## Common standards...

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Source: Port of Tallin

Every €1 million in passenger and crew spending generated 14 jobs in Estonia. On average each of these jobs paid €24,800 in employee compensation. The trade, transportation and hospitality sectors accounted for about 67% of the direct impacts. The manufacturing, financial, business and personal services sectors accounted for nearly 55% of the indirect impacts. Every 10 direct jobs generated by passenger and crew spending resulted in about another 11 jobs elsewhere in the economy of Estonia.

On average, cruise passengers spend 4,2 hours in Tallinn. Average total spending per person during one day was €71. Total direct impact €25,56 million. The majority of cruise passengers spent money on souvenirs and gifts as well as food and drink. Total turnover of turnarounds was 2,3 times higher than of transit calls.

Positive spread of word of Tallinn & Estonia reported 98% of all cruise passengers – they would very likely or quite likely recommend a trip to Tallinn to their friends or acquaintances. Around 47% visitors will very likely or quite likely return for land based vacation and 52% of the crew respondents reported that they were either very or extremely likely to return to Tallinn for a land-based vacation.

### 4.6 Support of local businesses

Cruising is, after all, a business, it is a social phenomenon designed for generating profit. Cruise lines are considered as the most benefited with the cruise sector activity. More than 50% of land-based activities are sold on board by themselves. From the value paid by cruisers for on shore activities, the local tour operator receives between a 50% and sometimes 25% of that value. Tourism service providers have to pay if they want to appear in advertisements delivered on board (videos, brochures, etc.). There is a high cost of participation in the most important annual industry event. The range goes from \$16,500 including registration and booth<sup>72</sup>.

The essential benefits for the destinations where cruise ships arrive include:

- expenditures on destination: form of purchases, excursions and hotel nights in home ports
- importance and benefits for the local commerce

<sup>72</sup> Compare Miami annual event for tourism



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- desire to at least 50% of total passengers arrived to return by other means of transport in ports (expenditures, investments in terminals and basic element in the policies of the city).

In addition to the direct economic effects of offshore tourism, cruise industry also generates indirect effects. Particularly important is creation of tourists' interest and making them visit the city and region again, but for a longer stay instead of just a few hours during the cruise. According to the assessment of tour operators this happens even in relation to over 50% of passengers (e.g. in case of Gdansk). Clearly, it results in the much higher income for the local economy.

The total price of a cruise is not just the ticket price and some government fees. While accommodations, most meals and tons of activities are included in the cruise fare, one has to pay extra for many of tempting amenities and activities, like spa treatments, shore excursions and cocktails. It can be tricky to figure out what total cruise trip cost will be and what kind of extra charges to anticipate.

The figure below illustrates the circulation of spending within the region

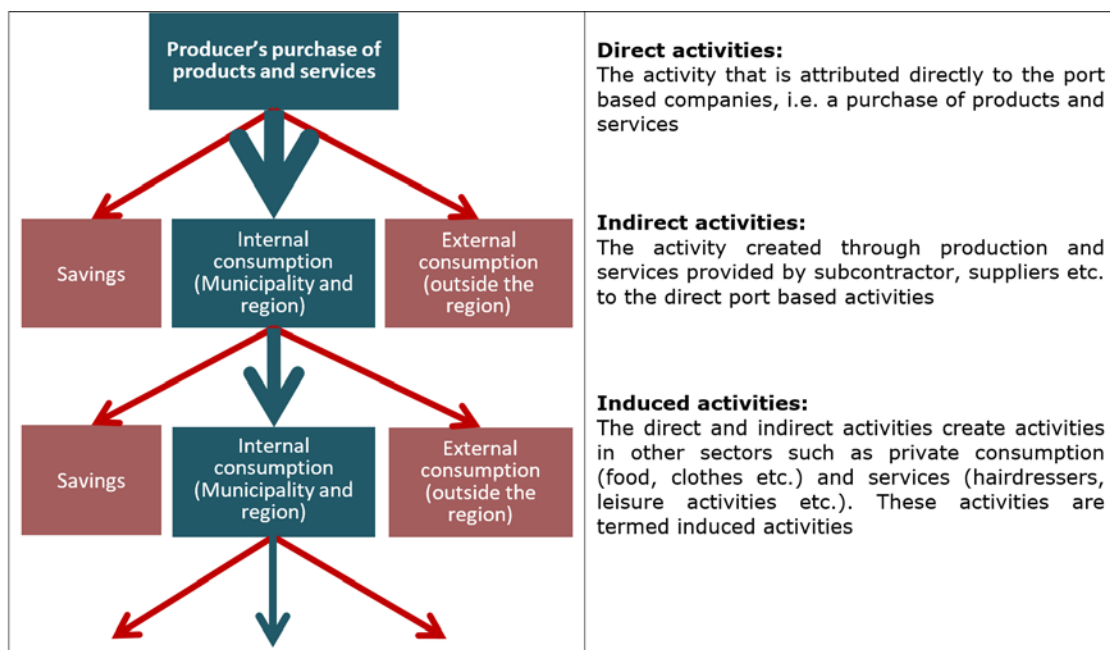


Fig. 20. The circulation of spending within the region

The tourist services sector consists of companies providing services to the passengers and crew of the current cruises prior to and after the cruise ship. Within this category are: local hotels and motels; local taxi drivers, airports, bus or train stations, restaurants/bars; retail goods; entertainment establishments such as ground tours, movies, amusements, etc.

The table below shows an example of a breakdown of the estimated 2015 average cruise revenue and expense per passenger for all cruise lines worldwide. The average per passenger per day is projected to be \$222.00, with \$168.43 ticket price and \$53.57 on board spending (average cruise duration 8 days, median duration 7 days).

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Tabl. 19. Financial breakdown of typical cruiser (worldwide, across all cruise lines)

REVENUE \$		EXPENSES		
		\$		%
Ticket	1,350	Other operating costs	258	14.5
Onboard Spending	429	Agent commission	231	13.0
-Casino & Bar	236	Ship fuel costs	192	10.8
-Shore excursions (cruise line portion)	86	Corporate Operating Costs	206	11.6
-Spa	43	Payroll	196	11.0
-All other onboard spending	64	Depreciation/Amortization	171	9.6
Total spending	1,779	Victualing (food)	107	6.0
		Onboard and other	78	4.4
		Other and transportation	59	3.3
		Interest Expense	55	3.1
		<b>Total Expenses</b>	<b>1,553</b>	
		<b>Profit before taxes</b>	<b>226</b>	<b>12.7</b>

Sources: Royal Caribbean Cruises, Ltd., Carnival Corporation and plc, NCL Corporation Ltd., Cruise Lines International Association (CLIA), The Florida-Caribbean Cruise Association (FCCA) and DVB Bank.

Activity at the seaport generates business revenue for enterprises providing services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and other services, to pay for the use of airports and seaports and to make federal, state and local tax payments. The remainder is used to pay stockholders, retire debt, make investments or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the region are those paid out in salaries to region's employees, for local purchases by individuals and businesses directly dependent on the seaport and airport, and in contributions to state and local taxes, as well as regional taxes. Landing fees and terminal rentals paid by airlines provide for some of the costs of operation of the airport and capital costs of new construction, while terminal leases pay to the Port Authority by terminal operators; wharfage and dockage fees paid by the steamship lines and cruise lines; and revenue from real estate leases, generate revenue to the Port Authority.

Cruise ships and the tourists on board stimulate economic activity. Some economic effects are direct, like purchase of fuel, water, payment for berthing, port fees etc. However most of the economic impact is connected with tourists and their activities. The regional economic impact of cruise related expenditures is influenced by several factors. Passenger spend depends heavily on whether the port

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serves as a home port or port of call, the amount of time a ship spends in port, personal preferences passengers and income, as well as the duration and arrangements of the cruise itinerary.

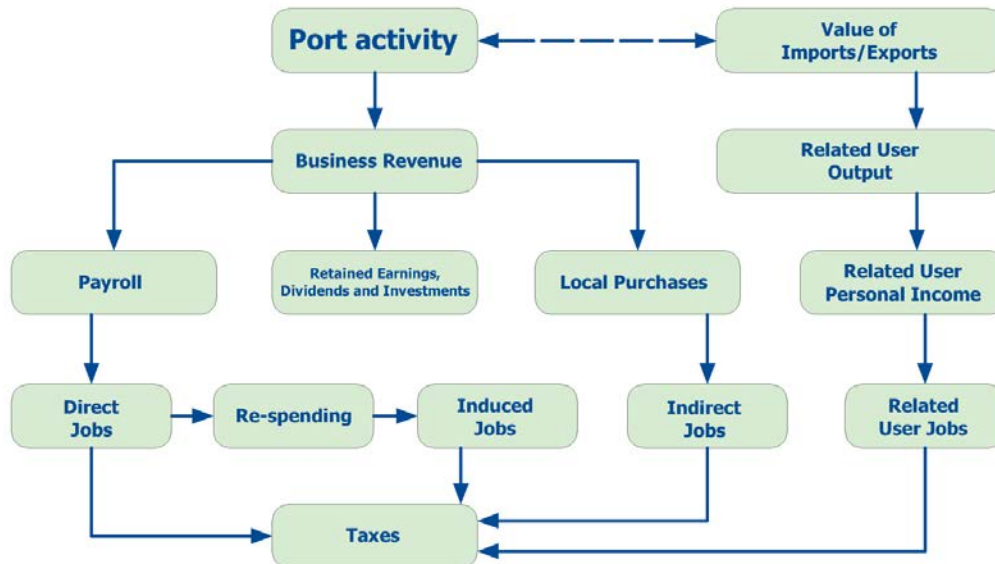


Fig. 21. Flow of Economic Impacts Generated by port cruise activity

Source: *The 2013 economic impact of the Port of Seattle*. Prepared by: Martin Associates, [www.martinassoc.net](http://www.martinassoc.net), 2014

The size of the destination influences the intensity of economics effects of the cruise activity. A cruise ship represents all four segments of the tourism industry: transportation, accommodation (including food and beverages), attractions and tour operators. In this sense, cruise ships are also direct competitors of the major land based resorts. The season peaks of cruise tourism and other form of tourism occurs at the same time putting cruise passengers in direct competition with other tourists for the same touristic services. In taking people to various destinations the cruise ships are a substitute for air travel. As floating hotels, they offer accommodation services. More and more, cruise ships features as resorts and a substantial minority of cruise ship passengers do not even disembark in the different port destination that are visited.

There is a diversification of the business impact of cruise passengers in a wide range of economic sectors not directly related to tourism. Sectors with higher indirect and induced impact were not only tourism sectors (as with direct expenditure) but also include other sectors such as real estate, wholesale trade, construction, legal activities and the manufacture of food products. The importance of cruise activity is therefore noted as a new source of economic activity in areas that are not strictly tourist sectors.

Supporting local businesses not directly related to maritime affairs is similar to support by land tourism but on a much smaller scale. Revenue can be generated in such areas of economy as: gastronomy, transport, shipyards, shops, insurance, banks, galleries, cultural attractions, guides, construction industry, construction of facilities, renovation of the wharfs.

Cruise visits have considerable potential as a source of economic development for coastal communities. However, as with various development initiatives, cruise tourism brings both

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potentially positive and negative impacts. Therefore coastal communities interested in regular cruise visits should take into consideration a number of factors. Due to the nature of the cruise tourism, particularly for smaller communities, cruise ships visits with many passengers may stimulate or require considerable change, which may involve the entire destination and its communities<sup>73</sup>. “All stakeholders need to become involved early in the process, to ensure that all the values and concerns are addressed, and to delineate the negotiation position to be taken in dealing with cruise lines and other partners”<sup>74</sup>.

“The regional economic impact of tourism expenditure is generally greater than the direct spend of tourists. If a visitor spends money that has been earned outside the region at a local grocery store (say \$100 – often termed the direct expenditure), the store-owner (and hence the region) earns an extra \$100 in income. The owner of the store may put aside some money for savings/profit (say \$10) and for taxation (say \$20). He/she may also spend money importing stock from overseas (say \$30), and may spend the rest on fresh produce from the local gardener (say \$40 – often termed indirect or knock-on expenditure). So the gardener (and hence the region) earns an extra \$40 in income. The economic impact of the tourist expenditure is thus greater than just the \$100 spent: it is equal to the \$100 earned by the grocer, plus the \$40 earned by the gardener – and if the gardener spends more locally, then the impact will be larger still”<sup>75</sup>. The ‘multiplier’ effect indicates how tourist spending generates extra regional benefit.

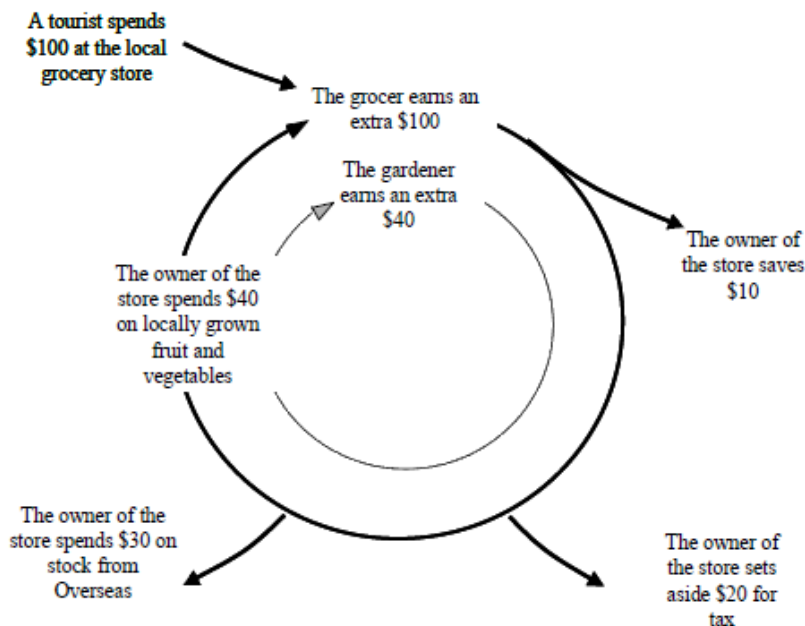


Fig. 22. The “multiplier effect: how tourist spending generates extra regional benefit

<sup>73</sup> Managing Cruise Ship Impacts: Guidelines for Current and Potential Destination Communities A Backgrounder for Prospective Destination Communities by Ted Manning, President Tourisk Inc. 2006

<sup>74</sup> Managing Cruise Ship Impacts: Guidelines for Current and Potential Destination Communities A Backgrounder for Prospective Destination Communities by Ted Manning, President Tourisk Inc. 2006

<sup>75</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas1\* under the supervision of Natalie Stoeckl1, 2 for The Australian Marine Conservation Society and WWF-Australia, April, 2015

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*Source: Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas under the supervision of Natalie Stoeckl for The Australian Marine Conservation Society and WWF-Australia, April, 2015*

The size of various multipliers in the region depends upon the industrial mix of the local economy, its interactions with business and the industry/sector of interest. Revenues generated by the sale of traditional crafts to ship passengers would bear a relatively high multiplier, as substantial amount of such items value-added is locally produced. Heavy fuel oil for ships, on the other hand, is typically imported from outside the regional economy. Since value-added of this product is mostly generated elsewhere, less of its sale flows through the local economy<sup>76</sup>.

Fuel, food stuffs and consumer goods for sale on a cruise ship each require their own particular supply chain infrastructure. Thus the ability of a port city to benefit from a cruise ship's demand for goods and services depends on its local industrial capacities. Furthermore multipliers tend to be lesser in rural/regional economies than in urban centres, mainly because there are fewer opportunities for people to spend money on local goods and services.

In order to attract ships and their passengers, however, destinations has to maintain good relationship with cruise line management responsible for choosing the ports of call and services. The effort of attracting cruise ships may often be hampered by a lack of information and the consequent lack of understanding by the cruise lines of the destination. If the share of the destination in the global cruise market is rather modest, the cruise lines are unlikely to invest substantial sums to recognise and familiarise themselves with such destinations. However, in reality the priority of the cruise line is these efforts must be counterbalanced against the reality that the cruise line's first priorities are to sell its ships and encourage passengers to spend money onboard.

The economic impact of cruise activity is not limited to the initial expenditure estimate. In case of the city and surrounding areas, cruise passengers generate similar revenues as other type of tourists. This particularly applies to the traditional activities associated with exploring local attractions, which necessitates transportation, guides, information, bars and restaurants, etc. However, there are no typical hotel services as accommodation and full meals are provided on board. In this case, no tax revenue is paid to the city budget.

The investigation conducted in the port of Bergen (a total of 1891 tourists to Western Norway during the summer of 2010 filled in a questionnaire) covering various aspects of holiday making and tourism revealed that, cruise passengers stayed for considerably shorter time at the destination than other tourists. Typically they stayed about 9 hours. Only 9.6% of cruise passengers stayed for more than 24 hours. Cruise passengers on the average reported that they spend NOK 493 (€66) on the day they filled in the questionnaire.

Among the most widely encountered head taxes in travel and tourism are entry and departure taxes employed by many countries to generate revenue from international tourism. Economic analyses of tourist taxes have focused largely on the hotel occupancy tax and daily car rental tax. There is no homogeneity on the application of taxes to cruises. Some ports maintain reasonable fees. The ports

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<sup>76</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas<sup>1\*</sup> under the supervision of Natalie Stoeckl<sup>1, 2</sup> for The Australian Marine Conservation Society and WWF-Australia, April, 2015

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and communities that receive cruise tourism are confronted with a series of hidden costs not normally take into account when making concessions in order to attract cruises. Between these costs are:

- depreciation of the port infrastructure, the buses, taxis, public toilets
- cost of ensuring transport and public security in the destination
- emergency medical services
- cost of enhancing streets and attractions
- cleaning and trash collection
- costs of cancelling or changing itineraries for a port
- damage in the long term of marine life and the cost to preserve the destination's tourism inventories.

However, currently, many of these home ports and ports of calls do not have an income that enables them to cope with the mentioned costs.

In ports with lesser cruise traffic, larger investments in handling ships and passengers are not anticipated. Nevertheless, the use of existing berths by cruise ships provides a source of additional revenue for the port by making better use of existing infrastructure, especially the berth providing the necessary potential for a better competitive position.

Turnaround ports, where the embarkation and disembarkation of passengers takes place, have a substantially larger share in influencing the port and regional economy, since the range of provided services is much wider than the ports of call where cruisers spend just a few hours.

Expenditures of cruise crews are very limited as short stopovers at ports do not reduce the scope of work and sometimes in addition to routine duties. Often it even requires additional involvement in cleaning, repairs and incidental work.

Cruise operators may choose different forms of organization of sightseeing programs in the ports of call. With the increased volume of cruise traffic at the port and the longer tourist season, cruise operators usually run their own travel agencies in the destination areas, or cooperate with local travel agencies to carry out orders for the organization of passengers' time. In Poland, for example, the main tour operator serving cruise ships is Baltic Gateway Poland, followed by Sport Tourist and Mazurkas Travel. Besides exploring historic sites, also shopping including souvenirs, regional products, works of art, etc. is an important element of the program.

For some destinations, the investment stimulated by cruise and other visitors can help to create critical mass for some services, for example enhancing such elements as public safety, range of shops, and availability of health services<sup>77</sup>. However cruise tourism in Northern Europe is seasonal and some services will close in the off season, reducing both access to services and employment in the off season.

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<sup>77</sup> Cruises, Seas and Ports of Call. Sailing toward sustainability. Managing the Impacts of Cruise Tourism, 2012. By Dr. Ted Manning, President Tourisk Inc. September 2012

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Cruise activity has a very remarkable multiplier impact on the regional economy. For example, from an initial direct expenditure of €442.5 million, cruise activity in Port of Barcelona ultimately generated a total turnover of €796 million (over €2.2 million a day and a multiplier of 1.8) in Catalonia, a contribution to the GDP of €413.2 million (of which €197.6 million were income wages), a total of 6,759 full-time equivalent jobs and 152 M € of tax revenue. In this sense, the high proportion of cruise passengers who use Barcelona as the base port for their cruise and its profile as a quality tourist port (after finding the highest relative expenditure of cruise visitors compared to holidaying tourists in the city of Barcelona) are shown as relevant factors when explaining the magnitude of the effect. All sectors, not just the traditional tourism-related sectors, profit from cruise activity. Proof of this is that, of the 6,759 jobs created in total, more than 40% (2,764) were concentrated in non-tourism sectors<sup>78</sup>.

Many cruise lines promote shopping excursions arranged by concessionaires. Ports may encourage and facilitate retail shopping excursions by reimbursing berthing fees, and participating retailers typically pay the cruise line fees. A cruise ticket is typically inclusive of all meals, so disembarking passengers tend to spend much less in local restaurants than land-based tourists. However, passengers do accumulate some spending on food and beverages during their stay. The arrival of a cruise ship can also be beneficial to taxi drivers, who experience a temporary jump in demand among passengers en route to activities throughout the city<sup>79</sup>.

Considering the sectoral breakdown, the benefits of activity not only affect the sectors commonly considered tourist-related, but extend throughout the economy. There is also catalytic activity of cruises in the development of other means of transport, especially air traffic. The importance of home port increases as many cruise passengers boarding or disembarking at the port use aircraft as a means of transportation to or from the port and this is crucial in the creation and maintenance of international routes that have their origin or destination in the airport at destination. Cruise traffic has therefore become a catalyst, especially for intercontinental routes (ex. Lufthansa or American Airlines).

The 1.77 million passengers sourced from Germany generated a total of €3.11 billion in gross cruise revenues across all cruise brands. Gross cruise revenues include the ticket revenues of the cruises, onboard revenues and the cost of transportation of passengers between their place of residence and the cruise port of embarkation and disembarkation. The transportation costs are predominantly collected by European-based cruise lines and are included in ticket revenues. Subtracting these transportation costs (€400 million), net cruise revenues of the German national and international brands totaled €2.71 billion in 2014. Average net revenues per German passenger was €1,530 in 2014. Net revenues are defined as gross revenues minus the passenger transportation costs. In general, net revenues are about 15% lower than gross revenues for the German national brands and 5% lower than gross revenues for the international brands.

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<sup>78</sup> Barcelona 8. Murillo, J., Vayá, E., Romaní, J., and Suriñach, J.: How important to a city are tourists and daytrippers? The economic impact of tourism on the city of Barcelona. *Tourism Economics* 2013, 19(4), 897-917.

<sup>79</sup> Economic Opportunities and Risks of Cruise Tourism in Cairns. Prepared by: Joseph (Mark) Thomas under the supervision of Natalie Stoeckl, 2 for The Australian Marine Conservation Society and WWF-Australia, April, 2015

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Cruise revenues generated by passengers sourced from Germany in 2014 (€billion) were as follow:

	Gross revenue	Net revenue
Total	3.11	2.71
German national cruise brands	2.33	1.97
International cruise brands	0.78	0.74

On a per passenger cruise night basis, net cruise revenues generated by passengers sourced from Germany averaged €173.37 in 2014. The German national brands generated an average of €184.93, which was 25% more than the average for international brands of €148.48.

Net revenue per passenger in German cruise sector in 2014 was as follow:

All cruise brands	€ 1,530
German national cruise brands	€ 1,670
International cruise brands	€ 1,248

The cruise industry employed nearly 5,800 German residents in their administrative offices and onboard their cruise ships. The German national brands employed the majority, totalling 78% of the cruise industry's German based employees. The German national brands employed 86% (1,373) employees, of the total landside employment and 75% (3,127) of the total crew.

Tabl. 20. German Employees of Cruise Lines, 2014

Specification	Total	Landside	Crew
All cruise brands	5,796	1,599	4,197
German national cruise brands	4,500	1,373	3,127
International cruise brands	1,296	226	1,070

Source: CLIA Germany and BREA

Public or private port owners are convinced that cruise lines should be paying for using the facilities and services in port. Sometimes the local government inspired by local residents or lobby groups are convinced that the lines should also pay on their passengers behalf for their use of the facilities and resources in the visited area. However, most cruise companies focused on the minimal cost to the destination, regard that apart from being taxed per passenger, they should in fact be paid for bringing tourists to destinations, because the tourists will spend money, support jobs and possibly return in the future for a longer stay, providing that the first short cruise visit was satisfying. Often lowering taxes on business leads to increased investment.

An important market issue is who pays who and how much. For example in China cruise lines often are being offered some special deals or incentives. Sometimes costs are lowered at the particular season. For example Aida cruises are determined to have longer season in Northern Europe, however the port costs are much higher than in the Mediterranean, therefore in order extend the cruise



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season there should be cuts in port dues of 30%. Generally Cruise Baltic ports are open for negotiation and ready for introducing lower costs for late calls in order to extend the cruise season.

Public or private ports need direct or indirect financial support from their local, regional and possibly even national government. The reason for that is basically the fact that some of the key payments applied on visiting cruise ships do not go to the port authority but to other public or private bodies. Considering that most ports in Europe are publicly owned by quasi-governmental entities, their costs are regulated and often are not motivated by tourism issues. As a result port or tourist bodies are not authorised to decide about lowering costs. Lack of direct control by the port over the price level can cause significant changes in attracting ship calls. For example, Turkey had no cruise tourism until it came up with a fiscally creative way of attracting cruise calls<sup>80</sup>.

Port authorities and port management organizations should evaluate the cruise ship and passenger fees to balance the total cost of port operations, services, maintenance and security appropriately. Proper analysis should be followed by mechanisms to allocate a portion of the fees collected for future restoration of historic areas and maintenance of protected areas.

In order to quantify the economic impact of cruise activity, the traditional methodology is broadly used in impact studies based on the quantification of three types of effects: direct impact, indirect impact and induced impact.

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<sup>80</sup> Contribution of Cruise Tourism to the Economies of Europe 2011 Country Report United Kingdom The European Cruise Council July 2012. United Kingdom

## **5 Role of ports in generating business opportunities and mitigating pollution**

Cruise ports play significant role in generating business opportunities and in protection of the marine environment and in avoidance pollution from ships by providing adequate port reception facilities and suitable quayside energy infrastructure.

Fierce competition among cruise ports is forcing the terminals to continuous improvement of their productivity. In some ways productivity is measured by the same standard in cruise ports as in cargo ports. It is concentrated on the question how effectively the port/terminal can move passenger/tourists in and out of the terminal. The port's success depends on its ability to get cruise ships in and out of port within eight hours or so. The disembarking of, for example 3,000 or more passengers and then checking in the same number for the next excursion, all within eight hours, is all about the infrastructure that is there at the port. The cruise port has to keep up with the needs of the cruise market. Otherwise it will not attract cruise lines as a port of call. Port has to work very closely with the cruise line in order to manage.

Cruise activity acts as a clear catalyst that contributes to increasing investment in port infrastructure, revitalizing existing businesses and creating new activities. Often the significant growth of the cruise segment leads to the implementation of significant investments in port infrastructure, both in adapting the existing terminals and creating new ones dedicated exclusively to cruise ships, like in the case of Port of Hamburg or the Port of Barcelona. There are also business and attractions that are offered during the stays of cruise passengers in the city. Moreover, the relevance as a base port, not only as a port of call, generates a clear driving factor, that leads various shipping companies and other in the sector, locating their headquarters in the city (e.g. Aida or Carnival and Royal Caribbean).

When tourists arrive in large numbers they inevitably place stresses on the destination. They can overwhelm infrastructure if there has been insufficient planning. They also have positive or negative impact on the society, economy and environment of a destination. The average cruise ship now exceeds 2000 passengers and 1000 crew. There should be appropriate planning for handling more cruisers. Facilities to accommodate only one ship are likely to be insufficient on a day that three arrive at once and will require adequate berths, taxis, buses, seats in restaurants, toilet facilities, trained guides, parking places etc.

Several studies have detected a variety of effects from cruise tourism, both quantitative and qualitative, on the cities where ports are located and their surrounding environment. First of all, the improvement of the external image of the city: satisfied visitors describe positive experiences to their relatives, friends and acquaintances, and recommend it as a tourist destination. In the case of cruise passengers calling at the city, since the duration of their visit is limited (a few hours) if the visit was enjoyable, they are likely to decide to make a longer visit in the future.

There are several potential benefits of cruise tourism for a port. Possibly, this is the reason why destinations may be interested in being part of the selected group of ports chosen by major cruise lines. A similar argument is raised by policy makers to justify substantial spending for building new cruise ship terminals and expanding their infrastructure. However, there are also negative aspects linked to cruise tourism, such as: the cost of infrastructure in support of cruise tourism, including

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docking facilities, displacing or replacing shipping and cargo handling facilities, the cost of ensuring transport and public security in the destination, emergency medical services, enhancing streets and attractions; the cost of cancelling or changing itineraries for a port; and, in the long term, the damage to marine life and the cost of preserving the destination's tourism inventories<sup>81</sup>.

There is an increasing cost-base in cruise sector due to stricter security standards and regulations imposed by governments and international regulatory bodies (ISPS code) and rising insurance costs. Those cost-related issues are expected to increase along with ship sizes and growing number of passengers.

It is important to distinguish between hotel operations onboard a cruise ship and cruise operating. Cruise operating has a wider scope, involving the management of both land- and ship-based resources. Managing a cruise fleet is fundamentally different from managing a hotel department onboard a cruise ship. The structure of cruise tourism for supplying the travel to the destination and overnight accommodation differs from other types of tourism. Cruise ships generate rather low profitability in inbound passenger transport. Airlines arriving to destinations may be foreign owned or they do not stream their passenger revenues into the local economy.

Homeports act mainly as goods and services suppliers to vessels and their crew, and to passengers. In homeports often cruise business has a direct impact on almost every segment of the travel industry. These impacts are generated by the spending made by the ship and its crew, as well as by embarking and disembarking passengers who stay in port town for either one or two nights before or after their cruise trip.

Multiplier effect and leakage are common concepts in tourism. The tourism multiplier effect describes the circulation of tourism revenue within a local economy. Cruise lines might develop their own port reception facilities in order to have more influence and control on the retail outlets allowed to operate within the facilities and may give preference to their international partners over local business. When cruise lines are allowed to bring their own support services and ground handlers to destinations, those entities then compete for other businesses in addition to cruise passengers and have guaranteed revenue from ships.

When cruise lines operate their own tendering services and shore excursions, the operation's revenues may stay within their parent company or global partners. They also have stronger position in negotiating visitor entrance fees and food and beverage outlets. Furthermore, the scale of visitation from cruise passengers may maximize capacity and displace other visitors who would have paid a higher fee for products or services. These aspects cause a low tourism multiplier effect and increased economic leakage, which is unfavourable to the destination. In a common example, a tour operator will purchase services from a local ground handler, who will in turn hire bus companies to provide transportation for an excursion. The transportation company will purchase and maintain vehicles, utilizing the services of local mechanics and auto repair shops for service and repair. The auto shop will purchase spare parts from its vendors and so on.

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<sup>81</sup> Juan Gabriel Brida a,\*, Manuela Pulina b, Eugenia Riaño a,c, Sandra Zapata-Aguirre Cruise passengers' experience embarking in a Caribbean home port. The case study of Cartagena de Indias. *Ocean & Coastal Management* 55 (2012) 135e145

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When cruise passengers arrive to a destination within a highly controlled environment on a package tour spending within the destination is vulnerable to significant leakage. Large and mega cruise ships are nowadays increasingly vertically integrated and cruise passengers may shop, dine and purchase excursions while on board the cruise ship rather than at port. Leakage occurs when the local revenues generated from tourism are received by foreign entities or are sent outside the local (or national, depending on the evaluation boundary) economy and those benefits remain outside the destination. When local businesses are owned by a foreign entity and not by a foreign national residing within and have registered the businesses within that community, the predisposition for leakage increases.

However, cruise tourism spending may remain within the local economy, but it does not benefit the communities impacted by cruise tourism, especially indigenous groups or other community constituents, when subject to decisions of local authorities who may use benefit from tourism for other interests and lack transparency in its distribution.

The approach of port of Helsinki towards the environmental impact issues can be a good example of best practice. The port administration is taking responsibility for minimising the harmful environmental impacts of port and maritime operations<sup>82</sup>.

The air emissions of the Port of Helsinki are relatively small, compared to other sources. One of the Helsinki movable air quality monitoring stations is located within the Port of Helsinki area every other year<sup>83</sup>. When a moored vessel is connected to shore electricity, the need to use auxiliary engines is reduced.

Vessels can discharge their waste waters directly into the sewage system for no additional charge at all Port of Helsinki quays. The Port of Helsinki's price incentive is working: in 2016 almost 90% of international cruise ships discharged their waste water. An increasing number of vessels are discharging their waste water to be processed on shore. In 2016 nearly 90% of international cruise ships discharged waste water at the Port of Helsinki's quays.

The Port of Helsinki provides waste management services primarily for international cruise ships and some cargo vessels. All Port of Helsinki harbours (South Harbour, West Harbour, Vuosaari Harbour) have their own waste management plans. Each of the Port of Helsinki's quays is equipped to allow for direct discharge of waste water into the sewer network, from where it is transported directly to HSY for processing. A separate charge is not levied for discharging waste waters.

The vessel waste management charges in the Port of Helsinki's are based on the size of the vessel, rather than on whether the vessel is discharging waste at the harbour or not. The port does not charge separately for discharging of waste water, and in 2016 also implemented a price incentive of a 20% discount on solid and oily waste charges if waste water is also discharged at the harbour.<sup>84</sup>

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<sup>82</sup><http://www.portofhelsinki.fi/en/port-helsinki/environmental-responsibility/management-environmental-impacts>

<sup>83</sup> HSY - Helsinki Region Environmental Services Authority

<sup>84</sup> Finnish Transport Safety Agency, Trafi.

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In the case of the port of Rostock for the disposal of oily residues from the engine area and of residues from exhaust gas cleaning which are covered by the flat-rate fee the collective total of all such waste types per port call amounts to 7.5 m<sup>3</sup> for ship over 20,000 GRT. Oily residues the cargo area are to be disposed of through the waste disposal companies bound by contract to the port operator and shall be invoiced separately by Rostock Port Development Company. Costs exceeding the standard disposal (e.g. larger amounts, insufficient pumping capacity, waiting times, empty runs) shall be charged to the ship by Rostock Port Development Company. Removal of such wastes takes place by a tank truck. Any additional costs incurred through non-compliance with this stipulation may be charged to the ship's command. The pumping is to be done by the ship.

Port authorities and managers must carefully calculate fees to cover the expenses of port operations, services, maintenance, and security such a way that the cruise ships are not overcharged. It is also important to include the costs of local infrastructure to accommodate cruise passengers. Cruise lines can work out deals with regional, national or higher level governments to generate profit, even when the local community does not. However, a tourist tax can provide revenue for sustainable management investments.

## 6 Required standards and best practices in the cruise industry development

### 6.1 Factors determining cruise sector development

The global demand for cruises is likely to see further growth given the increasing level of cruise participation of customers from various age groups, background and regions. 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.

The main impact on cruise sector development and on cruise port investments can be attributed to:

- Economic changes – cruise industry increased substantially, thanks to economic growth, growing importance of logistics to organize complex services,
- Technical changes - growth in ship size to better achieve economies of scale has been a prevalent technical change, required dedicated port terminal facilities, pressures on ports to upgrade and improve their facilities.
- Organizational changes – cruise industry is increasingly controlled by large cruise operators, port and city cooperation.

There is the challenge posed by new technologies particularly by the impact and potential of technology advancements related to energy efficiency, propulsion, hull-construction, safety and security technology and employee productivity (information and communication technologies). Also the growth of the cruise growth is constrained due to limitation in cruise ship supply. Over the last decade, the concentration in the cruise-ship building industry has been observed. At the same time the backlog of ship orders and the time required to produce and deliver a new vessel ultimately imply planning risks for cruise operators.

The cruise port main characteristics criteria can be related to the site (natural port characteristics, port efficiency, port management, port infrastructure, port services to passengers, port services to cruise ships, cost of port services, city amenities, political conditions and regulation framework) or to the situation (sea connections, land/air connections, proximity of markets for cruise passengers and regional attractions). The main influencing factors for cruise port selection include the key natural and cultural assets of the port, port facilities, location access to other destinations and the home port, security, infrastructure (vehicles, well-trained guides and coordinators, etc.), provisioning (local supply of food, drink, and clean water), port costs (dockage fees, etc.), and marketing (the variety of itineraries available for passenger selecting)<sup>85</sup>.

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<sup>85</sup> Ying Wang a,1, Kyung-Ae Jung a,1, Gi-Tae Yeo a,\* , Chien-Chang Chou Selecting a cruise port of call location using the fuzzy-AHP method:A case study in East Asia. *Tourism Management* 42 (2014), pp 262-270

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Fig. 23. Trends and opportunities for cruise ports

Source: Economic and Law Dept. Maritime Institute in Gdansk

The operation of cruise ships within a destination depends largely on government regulation which should be consistent and fair to all stakeholders and should not impose any extraordinary costs for compliance. Regulation which is obscure, inconsistent or fragmented can pose a significant risk to the smooth operation of a cruise ship as well as lead to added costs for compliance.

Berth availability and the capacity of small communities to accommodate large tourist influxes of short duration is a serious issue. This is likely to boost the additional involvement of the cruise industry in terminal operations.

Cruise ports of call should provide local and regional land-based attractions, such as cultural and nature attractions, shore excursions, traditional native activities, and so on for passengers to experience and enjoy. These experiences should not be available onboard determined that cruise passengers prefer to stay longer at ports and to limit the number of ports they will visit.

Cruise ports should provide cruise vessels with basic supplies (water, food, and fuel), waste handling and repair services, passenger shore facilities (shops and foreign exchange bureaus), and tourism information offices. In the hybrid and combination cruise industry, relative laws, policies, etc. should be initiated as a cooperative exercise between government and stakeholders so that the regulations could be more efficient and reflect the overall needs of operators and passengers. Passenger

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shipping legislation and taxation are key factors for cruise lines, as are maritime law and policy, relaxed visa requirements, reasonable head tax and port charges, and expedited clearance procedures at ports.

In Northern Europe, due to climatic conditions, the cruise season usually lasts from May to September. Marketing operations in less frequented ports of call usually involve local tour operators. Cruisers' stay in the transit ports usually takes 8-12 hours, although in Poland and some less frequented ports this time takes just 6-8 hours. The choice of both the port and the customized offers of sightseeing and touristic attractions is influenced by the attractiveness of the region, quality of the provided services and the duration of the stay in the port. The final decision about place of cruise calls is taken by shipowner after taking into account such factors as the state of port facilities for cruise service, port fees, port distance from main cruise routes plus quality vessel maintenance services<sup>86</sup>.

The geography of cruise and commercial ports is completely different in terms of the dominant ports and the regions being serviced. A cruise involves two travel segments, the first being 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 accessible to a large customer market, i.e. by a well-connected airport, with significant airlift capacity and which represents in itself a touristic destination. This is the case for example Barcelona and Civitavecchia are major hub ports for the Mediterranean and Hamburg or Copenhagen for the Baltic, which are well serviced by air transportation.

Poorly connected airports are commonly associated with higher airfares. There are a number of customer benefits linked to having more cruise embarkation points available such as drive-to convenience and fewer airport burden. More "close to home" ports also increase the likelihood of cruising<sup>87</sup>.

The port is primarily a working area and looks as such. It should, however, be clean and free from dangers for walking passengers. Infrastructural limits can be changed by investment. Minor modifications are rather inexpensive and can be financed through port fees and taxes, but large projects can result in overdevelopment and lost investment. Destinations need to consider whether they have sufficient assurance that the port or attraction will continue to attract visitors over a period long enough to justify the investment.

### **6.2 Infrastructure at destination**

Integrated approach between cruise industry, ports and coastal tourism stakeholders for cruise tourism at local, regional, national and European level is needed. The main solutions for common challenges might be found through provision of adequate services and facilities in ports, carrying capacity of destinations, connections from ports to touristic centres, coordinated implementation of legislation. Seaports are a business and employment opportunities (direct and indirect), hence the

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<sup>86</sup> Kizielewicz J.: Attractiveness of the region of Gdask Coast in the light of research on cruise ship passengers. Research Papers o Wroclaw University of Economics. ISSN 1899-3192, p.152

<sup>87</sup> Jean-Paul Rodrigue a,1, Theo Notteboom b,\* The geography of cruises: Itineraries, not destinations Applied Geography. journal homepage: [www.elsevier.com/locate/apgeog](http://www.elsevier.com/locate/apgeog). J.-P. Rodrigue, T. Notteboom / Applied Geography 38 (2013) 31e42



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improvements of seaports is important. For this reason port's investment is a key issue in modern ports economics with respect to planning to port development, financing and assessing to return on investment.<sup>88</sup>

Cruise ships introduce a significant economic impact into port areas. A ship spends money on port and handling fees and it brings in large groups of tourists that visit the area around the port and its cultural or historical attractions. The growth rates and related economic impact recorded in the past decade have tempted many policy makers, from the local to the European level, to attract this industry to their ports. With ships becoming larger and carrying more passengers, attracting an average cruise ship can boost local shop sales, tour sales and other businesses. However, attracting cruise ships also comes with costs attached, as it is necessary to provide a berth (quay), security (ISPS), transport facilities (parking areas for coaches, trains, etc.) and (dis)embarking facilities (terminal) for those ports that want to become a turnaround port. These facilities may require substantial investments by port authorities.<sup>89</sup>

The increasing size of ships and the increasing number of visitors causing overcrowding effect, are posing significant demands on the infrastructure of the ports and surrounding resorts. Such demands are associated with significant economic, social, and environmental implications.

The key short-term challenge is to be able to accommodate the rapid growth in the cruise line industry and the parallel growth in the numbers of mega-ships. Port serving the cruise industry today needs at least two mega-ship berths if they are to make an impact.

Cruise terminals and port facilities are the point of entry and often the focus of destination in regards to cruise tourism development, especially in cases where no prior cargo terminals exist and facilities need to be constructed. The associated capital costs, investment structure and policy framework create the foundation for long-term viability of cruise tourism within the destination.<sup>90</sup>

The extremely competitive market require adequate maintenance and investment in cruise ports. In Europe ports need to invest in new infrastructure in order to<sup>91</sup>:

- respond to the demand for more capacity and to the increasing size of ships,
- develop infrastructure to meet new environmental requirements and to prepare for the energy transition,
- maintain and, if needed, upgrade the existing security infrastructure,
- optimise and green their hinterland connections,
- attract and satisfy cruise ship passengers.

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<sup>88</sup> Sibel Bayar Çağlak and others: The Impact of Seaport Investments on Regional Economics and developments. International Journal of Business and Management Studies vol 3, no 2, 2011 issn: 1309-8047

<sup>89</sup> Tourist facilities in ports – Growth opportunities for the European maritime economy: economic and environmentally sustainable development of tourist facilities in ports – Study report. European Commission 2009.

<sup>90</sup> 1. Indicators of Sustainable Development for Tourism Destinations – A Guidebook. World Tourism Organization (UNWTO), Madrid 2004

<sup>91</sup> Like for example Carnival's "Faster to Fun". Some terminals, like Royal Caribbean's at PortMiami, offer digital luggage tracking to allow passengers to follow the location of their bags on their smartphones.

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Communities and destination authorities need sufficient infrastructure provided. First impression of cruise passengers of a port destination is often the port and its facilities. The port must be able to provide a pleasant image and maintain excellence in all areas of service because any negative experiences will have an equally negative impact on passengers' perceptions of the port.

Cruise ports have to invest in modern facilities that are able to serve the needs of the new generation of cruise vessels and to handle the produced waste in a most efficient and effective way. On the one hand, cruise ports must comply with their applicable environmental laws and regulations in order to avoid enforcement actions by the responsible government agencies. On the other hand, the presence of societal pressures motivates them to develop 'greening' initiatives that go further than just the regulatory approach. From an investment point of view, there should be a positive return on investment for the local community.

Investments in port facilities can attract (additional) cruise tourism to a port region and can therefore provide a return on investment if the additional economic impact that will be created outweighs the necessary investments. Before a port invests in port facilities it should consider its strategic position as a cruise destination. Infrastructural limits can be changed by investment. Minor modifications are rather inexpensive and can be financed through port fees and taxes, but large projects can result in overdevelopment and lost investment<sup>92</sup>.

The cruise tourism facilities at destination can refer either to port-related facilities or pure tourist facilities.

Port-related facilities include:

- berthing facilities,
- fuelling and water supply facilities,
- loading and unloading facilities
- and sea rescue security systems

Tourist facilities include:

- accommodation,
- shopping, and entertainment.

In addition, IT facilities, and customs, immigration, and quarantine facilities are crucial factors.

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<sup>92</sup> Sustainable Cruise Ship Tourism: A Carrying Capacity Study for Ísafjörður, Iceland, Megan Anne O'Brien. University of Akureyri. Reykjavík, February 2014

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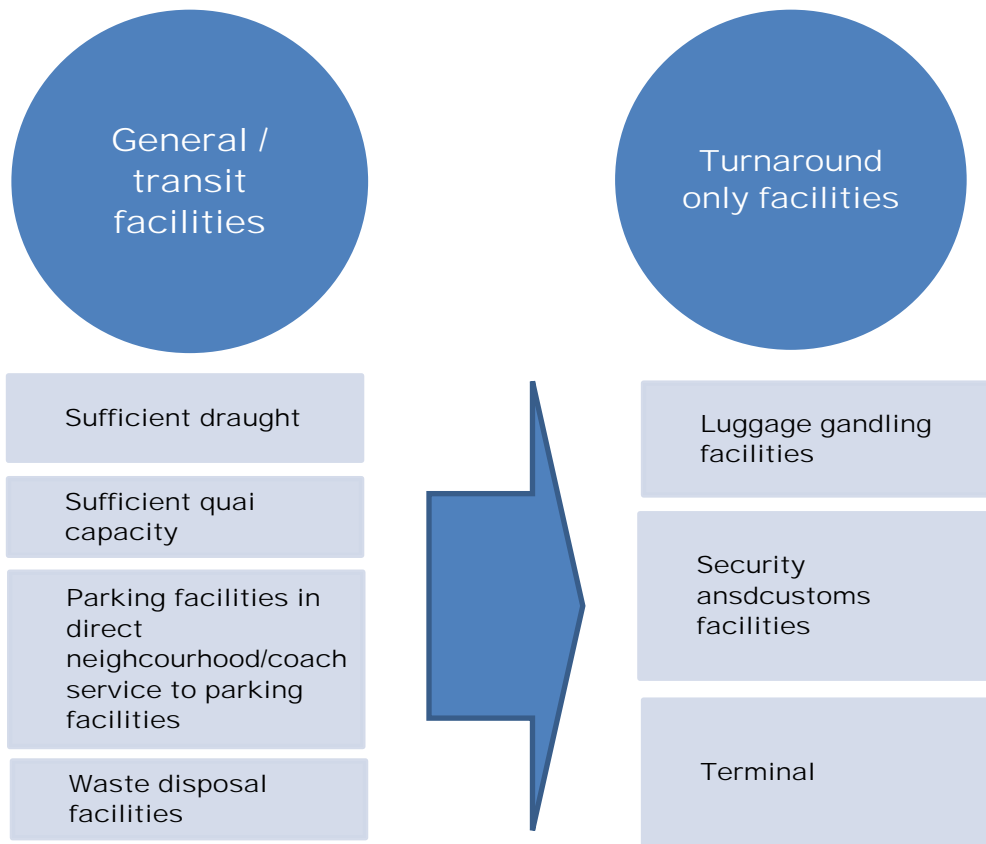


Fig. 24. Level of facilities needed for different type of ports

Source: Economic and Law Dept. Maritime Institute in Gdansk

For the transit port the involvement in cruise sector comes from the need to increase the use of the under-trafficked port facilities to increase revenue and pay for prior investments. Cruise ships are welcomed by some ports in order to stimulate development and economic activity<sup>93</sup>.

Port development projects should ensure that the taxes and fees charged to cruise ships reasonably cover the cost of maintaining the facilities. The operationally excellent destination is driven by minimising costs and handling tourism flows most efficiently. This type of destination is mass-driven, has excellent accessibility and facilities for the reception of substantial tourist flows. Therefore investments in port facilities in ports should be focussed on improving the passenger-ship-destination interface (e.g. dedicated quays for cruise ships, sufficient handling capacity, sufficient coach parking places, etc.). Considering the individual tourist orientated destination, which is focused on delivering the highest value for individual tourists who want to schedule their own time and activities during a visit, the destination shall offer high accessibility (to tourist attractions) and excellent tourist facilities in the port and the immediate surroundings. This type of destination is either a pure transit destination or a cruise tourism hub, therefore the investments in port facilities should be focused on improving the passenger-to-destination interface (e.g. dedicated cruise quays,

<sup>93</sup> Sustainable Cruise Ship Tourism: A Carrying Capacity Study for Ísafjörður, Iceland, Megan Anne O'Brien. University of Akureyri. Reykjavík, February 2014

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sufficient and high quality public transport, sufficient coach parking places, tourist information, etc.)<sup>94</sup>.

The type and availability of port facilities vary according to: the size of the port, the level of its modernisation and the system of management. Ports operating within a region with high tourist attractiveness can focus on becoming either a pure transit destination or a cruise tourism hub.

The minimum requirements for cruise transit port infrastructure are:

- depth,
- appropriate quay length,
- wide apron for handling passengers,
- ISPS rules implementation, immigration and customs,
- close vicinity or a high-quality connection to the local tourist attractions,
- good temporary anchorage in vicinity of touristic attraction can be sufficient for a cruise transit port.

Cruise turnaround port infrastructure is more demanding and requires:

- good connection with the arrival/departure point of passengers (airport/railway station/bus station). Especially for airports, a vast amount of international connections is needed,
- in the case of turnaround operations, vast parking areas near the cruise passenger terminals are essential.
- Port suprastructure can be classified into fixed assets built on the infrastructure, such as terminals and sheds, fuel, tanks, office buildings and fixed and mobile equipment such as cranes and van carriers.

Ancillary services may include suppliers, repair facilities, security and clearance. Terminals and sheds are required for passengers to pass through security, customs, embarkation procedures and as place where consignees can carry out their administrative paperwork for the ship and the passengers permits (sanitary, customs, etc).

The cruise industry has the potential to provide economic benefits to a port state. However, accommodation of large cruise ships into port requires a great deal of initial capital investment in infrastructure as well as maintenance costs. As cruise ships continue to grow larger, further investment may be required. Under these types of tourism scenarios with high infrastructure or environmental costs, rapid growth of tourism may result in a stagnation of or even a decline in GDP<sup>95</sup> Without significant foreign investment into this infrastructure, it is questionable whether construction of large cruise ship terminals could pass a cost-benefit analysis. The cruise terminal location can take place on city property, port property or private property.

Many transit ports in the Baltic Sea area lack the potential of accommodation as many cruise ships over the course of the season have in ports in Hamburg or Copenhagen, hence they have to develop

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<sup>94</sup> European Commission 2009. Tourist facilities in ports – Growth opportunities for the European maritime economy: economic and environmentally sustainable development of tourist facilities in ports – Study report

<sup>95</sup> Cruise tourism: economic, socio-cultural and environmental impacts,(2014)

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flexible technical solutions and new business models to achieve synergies with other vessels also interested in using green fuel.

Main cruise ports are investing heavily in infrastructure improvements<sup>96</sup>. In the early '90s the largest cruisers accommodated 2,500 passengers. Nowadays the large cruisers accommodate over 6,000 with almost twice as many bags and suitcases. As a consequence, more laydown area for the bags is needed, more check-in desks, custom signs and security lanes. The terminals nowadays have to be renovated and upgraded accordingly<sup>97</sup>.

At present, an increasing number of cruise terminals are owned or partially owned by the cruise line companies, therefore there is an upstream integration of the supply chain observed, rather than pure integration with the service provider.

For ports having a port region with low tourist attractiveness, should from an economic point of view only attract cruise tourism to its region if there is sufficient domestic or international demand for a turnaround point in the port's region. Moreover, accessibility is the main factor in the success of a turnaround destination. Investments in port facilities should therefore be aimed at improving the ship-destination-passenger interface (dedicated cruise berths, sufficient parking lots for coaches, etc.).

Regional efforts and/or investments in enhanced tourist friendliness are important enabling the destination to exploit the opportunities of exploring tourists and/or budget driven cruise tourists.

Rational planning of tourism facilities require broader involvement of the destination and region. Many of the key assets from the point of view of cruise visitors, and regular tourists as well, are managed by other industries. These include the small boats which make the port attractive, the main street facades where historic architecture is the valued feature, the protected habitats, etc.

In designing and investment in shore facilities at the port and for tours the cruise lines and/or visitors could help in funding the infrastructure they need, partnerships in environment protection etc. for the sites to be visited. There are a number of specific areas of concern:

- Impacts of shore tours on ecological resources. Specifically control of numbers, timing and behaviour are of concern.
- Impacts of sea tours on fragile ecology, notably sensitive areas, awareness, and negotiation of conditions of access for tours etc. There is a capability to negotiate where ships can anchor, which ecosystems are to be accessible to them, and the conditions of access.
- Impacts of levels of use on natural systems.

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<sup>96</sup> For example port of New Orleans recently added 150 chairs, more embarkation counters, additional X-ray and screening machines, state-of-the-art electronic wayfinding stations and tripled the size of the Captain's Lounge at the Terminal to keep passengers comfortable while they are waiting to board their ship.

<sup>97</sup> Port Canaveral is the second busiest cruise port in the world in multi-day embarkations. Port Canaveral has 6 cruise terminals. Recently the port completed a nearly \$50 million renovation of terminal 5, and is in the process of upgrading terminal 10. Terminal 5 can handle ships with up to 4,000 passengers. Its primary user will be Carnival Cruise Line. Improvements included a 1,044-space parking garage, 120-foot pier extension and new passenger boarding bridges.

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- On shore tourist waste management. Tourists will create waste, solid and liquid. Waste management needs to be a central element in any tour management.

Considering that previously, the cruise season in Northern Europe and the Baltic Sea area extended only three months and the short season aggravated the concentration of cruise tourists. However the season has been extended to almost 140 days (May-September). There will be more ships over a longer period but with more days in-between. With a longer cruise season, the port and city will be able to accept more ships without overcrowding effect and shortage of services.

“The cruise industry worldwide is subject to a wide range of risks, threats and vulnerabilities. These risks can attach to any aspect of cruising and invariably, at some time, do. Risks can affect the cruise line itself, individual ships, ports and terminals, passengers, and onshore providers.”<sup>98</sup>.

There are certain cruise port facilities which can be standardised, like for example:

- No separate cargo/container loading/unloading when cruise ships are in port,
- Well organized rest area with information signs showing where passengers can leave the port area (buffer zone, designated walkways to alleviate conflict with dock workers),
- Increased number of public toilets,
- Bus parking with clear loading and unloading area (away from the work operations on the dock,
- Information such as signs about taxi and bus locations, tourist information sign and map, notice board with city map or other information about activities/events in popular foreign language, signs showing direction to/from port enabling avoidance of congestion and interference.

Concerning common standards, cruise ships should meet the same standards and rules in every port. For example measuring cruise port productivity. All ports depend on development of port infrastructure including: berths, fenders, piers, docks and port basins. For the port it is essential to have sufficient depth for visiting cruisers/ships at all states of tide. In situation where berths are not available or the necessary manoeuvring is not possible, cruisers may anchor or moor at the buoys that will vary in size according to the size of ship. Berthing service include: pilotage, towing and mooring.

The construction of berthing facilities for cruise ships, as any kind of construction, inevitably causes some form of environmental impact. Best practice for mitigation of these impacts can be attributed to proper site selection and construction techniques. Also when dredging is needed to enable cruise ship access, best practices, environmental impact assessment and benchmarking of dredging procedures and impacts should be carefully analysed.

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<sup>98</sup> Wendy R London: Economic Risk in the Cruise Sector.

## 7 Conclusions/Recommendation.

In order to quantify the economic impact of cruise activity, the traditional methodology is broadly used in impact studies based on the quantification of three types of effects: direct impact, indirect impact and induced impact.

Usually cruise passengers number is cited as a measure of demand. Passengers day and passengers expenditure are the main output measurement of the cruise industry. Average expenditure per person by port is usually computed from questionnaires and the quality of this data might be questionable. The amount depends on the destination and on the category of the port<sup>99</sup>.

Cruise tourism is viewed as generating less revenue per passenger than overnight tourists in a destination, however this aspect often is not distinguished in the cost and impacts of building the infrastructure, marketing the destination and operating the support services needed to fly in and accommodate a similar number of overnight tourists. Cruise lines maintain strategies to maximize passenger spending within their operating agreements.

Considering the recent boom of the cruise industry activity it is difficult to find data to analyse the economics of cruise tourism. Most works today has been based on observational data. Data collected by cruise lines provide estimates of cruise-related expenditure but many required data are not available. Cruise data are scarce and not homogenous<sup>100</sup>.

There are many economic impact studies being conducted by cruise line or by local business entities. Depending on the methodology and beneficiary. Following the best practice in assessment and monitoring cruise tourism might produce satisfying results, however economic impact studies may indicate different results for the same cruise passenger. Destinations should consider how the studies will be undertaken and ensure that scope of expenditure and impact will generate results best illustrating the reality.

Improving and further developing common methodologies for assessment of passenger spending and economic impact is important, considering that it shall enable benchmarking and data aggregation, as well as improve monitoring's effectiveness across destinations within a country and a region.

Economic impact and passenger spending calculations are limited to the moment of cruise visit and do not account for potential future gains. Cruise passengers who have a positive experience within a destination may decide to return to that destination by air or land in subsequent visits.

Cruise tourism, especially considering currently operating large ships, might generate some problem in applying sustainable development due to its large-scale at a time causing overcrowding and substantial disruption for local communities. Cruise shore excursions often differ from best practices common for other forms of tourism. Cruise tourism is not always the most welcome option for some communities and destinations. Therefore, there is a need for a balanced approach that focuses on

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<sup>99</sup> For example, Florida-Caribbean Cruise Association (FCCA) reported, during the 2005–2006 the average per cruise passenger spending per port-of-call was \$98.01, and average spending per port-of-call by crew members was \$74.56. The expenditures at other ports are not easily available.

<sup>100</sup> Cruise tourism: economic, socio-cultural and environmental impacts,(2014)

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minimizing impacts and risks. Efforts should be focused equally on the passengers and distribution channels of cruise tourism.

In economic impact assessment applying shared methodologies and common indicators are important to facilitate understanding and calculations. However, benchmarking may be more important than establishing required thresholds for many indicators<sup>101</sup>. The indicators should be integrated into a more comprehensive set, for destinations, not just tourism. Some measures are optional but in some cases useful for supporting decisions about investment or organisational purpose. However it will raise costs. Indicators and evaluation are not final results in themselves, they are only tools. The measures should be clearly defined considering: economic factors, socio-cultural and environmental factors, governance, external changes or threats.

In economic impact assessment of cruise tourism transparent and adequate standards should be adapted reliable calculation and cost benefit analysis. Apart from business aspects, there is need for appropriate management of noise levels, waste, water, air quality and energy efficiency. Port authorities and terminal management should evaluate the cruise ship and passenger fees to balance the total cost of port operations, services, maintenance and security appropriately.

A clear policy framework is important. Cruise destinations should collaborate with the region in which they are located, and with the cruise lines in order to develop a comprehensive policy and means of ensuring compliance. There are various examples of best practice and success stories. Adequate initiatives should be followed.

ESPO elaborated the Code of Good Practices for cruise and ferry ports including following recommendations:

- dress up your port to impress
- match the long-term nature of planning port infrastructure with the quickly changing market needs
- involve the stakeholders at an early stage in the port planning
- good hinterland connections are a major success factor for the cruise and ferry port
- greening the infrastructure as to mitigate the environmental impact of cruise and ferry port business
- optimise the use of dedicated cruise and ferry port infrastructure

Cruise tourism should be considered within the context of a destination's long-term operation capacity. Cruise lines may change itineraries or reduce calls to some destinations and attractions that become rundown, overcrowded, unsafe, or lose too much of their original authenticity. Also, if cruise tourism causes or exacerbates social impacts or the revenues generated from cruise tourism are not properly utilized to manage risks, it can lead to reduced arrivals and income while the problems continue.

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<sup>101</sup> Criteria Indicators and Performance Measures. Informing Sustainable Development of Tourism Destinations. Ted Manning, Tourisk Inc., GPST Seminar, ITB Berlin 2013



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The harbour, which is run as a business, should not only look out for its best interests, but also those of the broader community. Part of the revenue should be set aside for infrastructure, community and environment funds. In places where ships land at several destinations there may be greater national capacity to set standards. For example, international waste management protocols. Dedicated approach to different regional challenges should be considered.

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