

# THE LEADING MARITIME CAPITALS OF THE WORLD

A REPORT BY MENON, COMMISSIONED BY NOR-SHIPING AND OSLO MARITIME NETWORK



## METHODOLOGY AND DATA SOURCES

### SHIP OWNERS AND SHIPPING OPERATION

Bloomberg data and company information gives the number of companies and the cities market capitalization. All the companies are placed in the city where they have their management office, according to company information. The world tonnage in percent is the gross national percentage and is given as a relevant proxy for the relative tonnage of the city. ISL Bremen is the source of shares of world tonnage.

### MARITIME FINANCE

Raw data for getting the market capitalization on the stock market and the city market capitalization is gathered from the Bloomberg "All list" from *Lloyd's List*. This material also creates the basis for the number of maritime companies in each maritime center. All the companies are placed in the city in which they are listed on the stock market. The listing is not complete. For example, rig owners and other offshore-oriented companies are not included. The data for syndicated loans and MLA is gathered from Dealogic, while DNB Markets has produced the table on the largest maritime banks' lending portfolio. The banks are then sorted according to the location of their maritime headquarter.

### MARITIME LAW AND INSURANCE

An attempt to rank the relative level expertise of Admiralty and maritime law in the cities is a difficult and, in the end, subjective task. We used the data from Legal 500 and supplemented it with data from other sources such as US news and HG.org (Lex Mundi) to create a list of law firms within the maritime centers. Then we used the Legal 500 rank of tier 1 through 3 companies in order to rank the law firm density of the specific cities. A first tier company got a value equal to three, second two and so forth. Large maritime law companies are in several cities, so we have decided to add the sub office if it is on the Legal 500 list. We believe that it is the best way of adding density of maritime law centers, since they mostly serve the specific regional market. Data of the largest P&I club insurers is gathered from the UNCTAD review of marine transport for 2011 and is then arranged according to each company's headquarter location.

### MARITIME TECHNOLOGY AND COMPETENCE

The data for the classification societies and ports operators is gathered from a UNCTAD review of marine transport in 2011. The companies are then grouped by their headquarter address. The "ports" variable is an average of the largest service terminal operators, measured by the global tonnage the company moves and the size of the city port measured in TEUs.

This is estimated using the ports own data and the American Association of Port Authorities world ranking list.

### BIBLIOGRAPHY

American Association of Port Authorities. (2012, March 08). <http://www.aapa-ports.org/Industry/content.cfm?ItemNumber=900>. Retrieved March 08, 2011, from <http://www.aapa-ports.org> ; various port internet sites.

Bloomberg. (2012, February 14). *Lloydslist.com*. Retrieved February 14, 2012, from [www.lloydslist.com](http://www.lloydslist.com)

Dealogic. (2012, January 5). *Bookrunner and MLA Tables for Syndicated Marine Finance\* Loans - Full Year 2011*. London, England.

Legal500. (2012, February 14). *Legal 500*. Retrieved February 14, 2012, from [Legal500.com](http://www.legal500.com)

Mundi, L. (2012, March 01). *HG.org*. Retrieved February 01, 2012, from <http://www.hg.org/law-firms/Admiralty-and-Maritime/Brazil/Rio-De-Janeiro.html>

UNCTAD secretariat. (2012). *Review of Maritime Transport*. New York : UNCTAD secretariat.

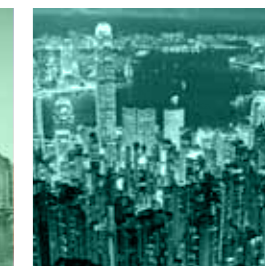
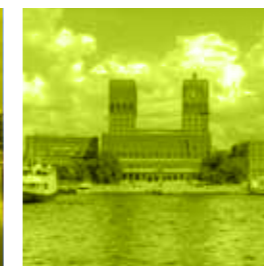
## EXECUTIVE SUMMARY

**COUNTRIES AND CITIES TO AN INCREASING EXTENT** compete to attract the leading firms and the most talented people. The winners in this race for attractiveness become the leading maritime countries and cities of the world. This report benchmarks the leading maritime cities in four areas; shipping, maritime finance, maritime law and insurance, and maritime technology and competence. The 12 cities are assessed both by objective measures that are widely used and renowned in the industry, and by industry experts from all continents.

Summing up all the indicators of the study, Singapore comes out as the leading maritime city of the world, followed by Oslo, London, Hamburg and Hong Kong. Oslo is no 1 in terms of both ship owners and shipping operation, but is beaten by Singapore on both maritime law and insurance and on maritime technology and competence. London is regarded as the leading maritime law and insurance city, but comes out as no 9 on shipping.

The five leading cities on each of the indicators, as well as the overall rank, are listed in the table below. ■

RANK	SHIPOWNERS AND SHIPPING OPERATION	MARITIME FINANCE	MARITIME LAW AND INSURANCE	MARITIME TECHNOLOGY AND COMPETENCE	OVERALL RANK
1	OSLO	OSLO	LONDON	SINGAPORE	<b>SINGAPORE</b>
2	SINGAPORE	NEW YORK	NEW YORK	HAMBURG	<b>OSLO</b>
3	PIREUS/ATHENS	LONDON	SINGAPORE	SHANGHAI	<b>LONDON</b>
4	TOKYO	SINGAPORE	HONG KONG	OSLO	<b>HAMBURG</b>
5	HONG KONG	HONG KONG	OSLO	TOKYO	<b>HONG KONG</b>



Menon Publication no 15

**Managing Partner:** Erik W. Jakobsen (Dr Oecon)

**Analyst:** Ola Thorseth

**Design:** Say PR & Communications



## CONTENTS

- 3 Executive summary
- 5 The maritime industry – global view
- 6 Global markets / global players
- 8 The leading maritime centers of the world
- 10 Shipping centers
- 12 Maritime finance
- 14 Maritime law and insurance
- 16 Maritime technology and competence
- 18 Conclusion  
– the leading maritime cities today
- 19 Looking forward  
– the leading centers ten years from now



# THE MARITIME INDUSTRY

## – GLOBAL VIEW

**IN RECENT YEARS, THE WORLD** economy has become increasingly integrated. According to Peter Dicken, a British professor of Economic Geography, a “global shift” (Peter Dicken, 2010) has occurred, transforming the world economy. Main characteristics are market integration, strong growth in international trade, foreign direct invest-

ments, the emergence of transnational companies and a dramatic increase in the interdependence between nations. Transnational companies operate across the entire world, taking advantage of economic differences by locating their business activities in the most attractive locations. The global shift fuels the growth of the world economy, but it also

represents a tremendous challenge to countries: It can no longer be taken for granted that companies will stay in their home country. To an increasing extent states have to compete on attracting and retaining internationalized firms. In other words, they have to be attractive hosts. ■







# GLOBAL MARKETS GLOBAL PLAYERS

**SHIPPING HAS ALWAYS BEEN** an international industry. In fact, shipping is the premise for international trade. A central driver for the global shift described above has been the operational and technological development of the shipping industry, lowering transportation costs dramatically. This has been vital for increased international trade and division of labor.

With the emergence of standardized bulk carriers, oil and other raw materials could be traded globally. Today most shipping markets, including cruise, offshore and car carriers, are globalized. Maritime services, however, has until recently been relatively national or regional, often located around the ship owning companies. Ship finance was among the first to globalize, while legal services, due to national jurisdictions, have been the most national of the maritime services. English law firms have been the exception, with branches in shipping hubs all

over the world, since English law is commonly chosen as the jurisdiction in contracts of trade and chartering.

Today, most maritime services are globalized. For example, the four leading classification companies capture 65 % of the global market, and the two largest ship finance book runners cover one fourth of the global market. Maritime insurance, financial services and port services are also highly globalized.

## GLOBAL PLAYERS

Partly due to, and partly as an effect of global markets, maritime companies have also become globalized. For example, AP Møller, the Danish shipping company, has a worldwide presence in several shipping markets, and a market value of 34 billion USD (14. February 2012). DNV (Det Norske Veritas), the Norwegian classification and technology consultant, has offices in more than 90 countries.

The structure of the companies varies a lot, but the dominant trend is to build corporations around specialized business units with a global reach. The Fredriksen Group is a good example. The group consists of companies specialized in segments like rigs (Seadrill), crude carriers (Frontline), dry bulk (Golden Ocean) and gas carriers (Golar). The location of firms has also been globalized. Value chains are often split up, with headquarters located in financial centers, operating units close to markets and R&D units in knowledge hubs. On the one hand companies have become footloose, with strong competition among regions to attract and retain them. On the other hand, the attracting factors, the glue that makes companies stay, have changed in recent years. Access to talent and knowledge based clusters has become increasingly important. ■

## A GLOBAL RACE FOR ATTRACTIVENESS

Countries and regions increasingly compete on being attractive locations for highly productive and innovative companies, and for talented individuals. The race for attractiveness exists on all geographical levels, from continents to cities. Actually, the city or the local region is the most relevant level of study, because firms seek specific factors in their location decisions. The more mobile firms are the stronger is the competition. This implies that it is easier to attract mobile firms, but it is also easy to lose them. Hence, the gains from win-

ning the location race are higher for the less mobile part of the industry.

Specialized knowledge based services are probably the least mobile companies in the maritime industry. The reason is that knowledge based companies often have linkages to universities and are deeply embedded in the local milieu, for example in their reliance on specialized local competence.

Another important point, following from the fact that firms increasingly

split up their value chains, cities compete to attract activities – not companies. The winners in the future are the ones that are able to attract:

- Science and education
- Owners and Headquarters
- R&D – product and technology development
- Financial, legal and other sophisticated services
- Specialized seed, venture and expansion capital



# THE LEADING MARITIME CENTERS OF THE WORLD



12 CITIES HAVE BEEN SELECTED for the benchmark:

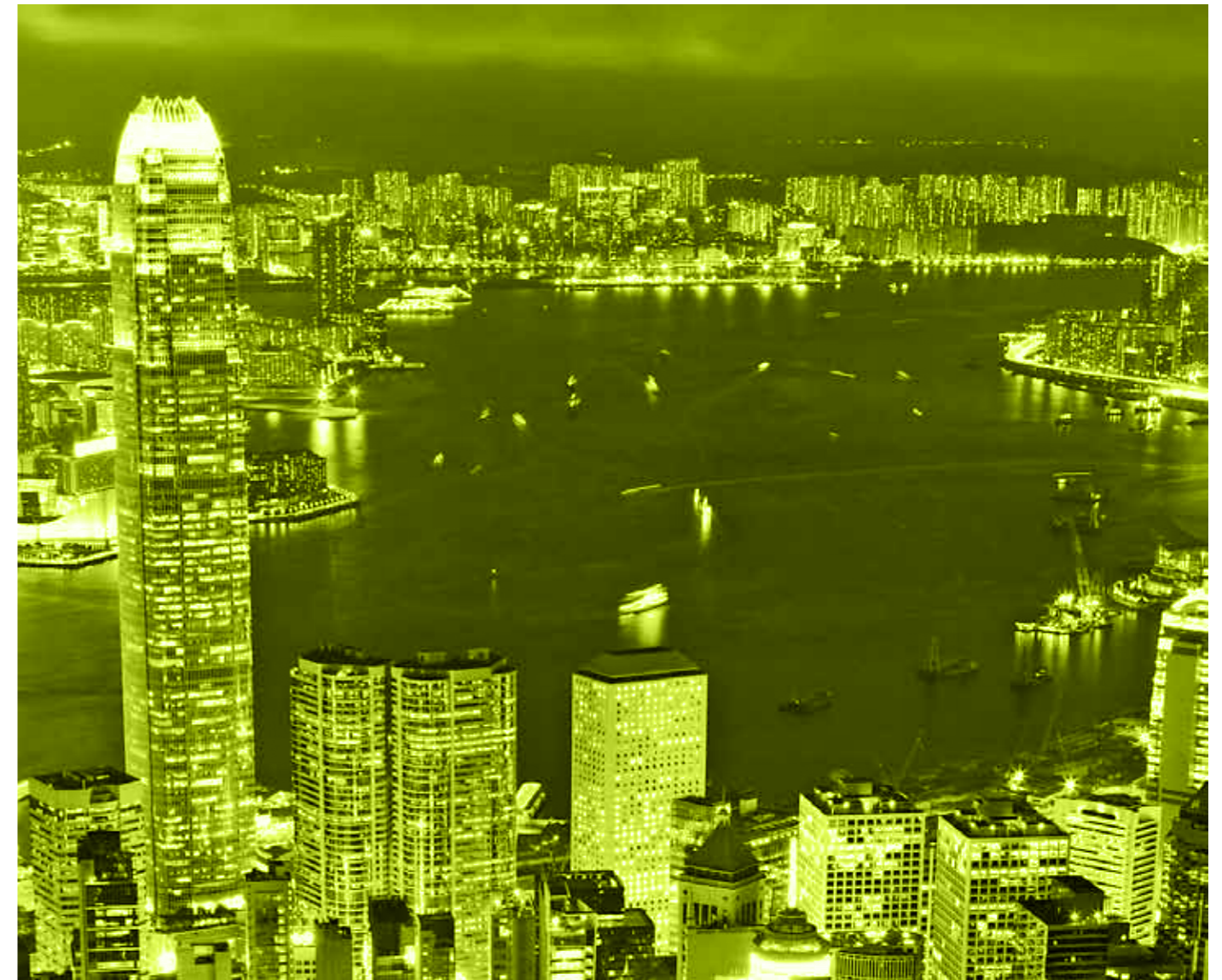
- COPENHAGEN**
- HAMBURG**
- HONG KONG**
- LONDON**
- NEW YORK**
- OSLO**
- PIREUS/ATHENS**
- RIO**
- ROTTERDAM**
- SHANGHAI**
- SINGAPORE**
- TOKYO**

We have used a combination of objective and subjective measures to assess and benchmark the 12 cities. The methodology and data sources of the 12 indicators are described in the appendix. These indicators are combined with judgments from our expert panel. 58 owners, executives, professors and journalists from 14 different countries on all continents, were asked to assess the leading maritime cities of the world. 28 of those contacted replied.

There are numerous ways to assess the strength of maritime services in the 12 cities. We have

looked for data sources that are widely used and renowned in the industry, and even though we have identified limitations in some of them, we have decided to apply them unchanged.

For example, although there seems to be variations between cities as to the requirements for getting a tier 1 status for maritime law firms, we have not tried to adjust for this by upgrading or downgrading any cities. The reason for this approach is that we want to keep the assessments verifiable for others and replicable in the future. ■



List of indicators that form the rank of the leading maritime cities of the world

MARITIME SERVICE	OBJECTIVE INDICATORS	SUBJECTIVE ASSESSMENT
SHIP OWNERS AND SHIPPING OPERATION	<ol style="list-style-type: none"> <li>1. No of listed shipping comp.</li> <li>2. Market cap of listed shipping comp.</li> <li>3. Share of world tonnage (national)</li> </ol>	<ol style="list-style-type: none"> <li>1. The leading shipping centers of the world</li> </ol>
MARITIME FINANCE	<ol style="list-style-type: none"> <li>4. Leading bookmakers/MLA</li> <li>5. Total lending portfolio</li> <li>6. No of maritime firms on the stock exchange</li> <li>7. Market cap of maritime firms on the stock exchange</li> </ol>	<ol style="list-style-type: none"> <li>2. The leading centers of maritime finance</li> </ol>
MARITIME LAW AND INSURANCE	<ol style="list-style-type: none"> <li>8. Maritime law firms, weighted by 1st to 3rd tier</li> <li>9. P&amp;I insured tonnage, share of global market</li> </ol>	<ol style="list-style-type: none"> <li>3. The leading centers of maritime law and arbitration</li> </ol>
MARITIME TECHNOLOGY AND COMPETENCE	<ol style="list-style-type: none"> <li>10. Classification, share of global tonnage</li> <li>11. Port operators</li> </ol>	<ol style="list-style-type: none"> <li>4. The leading centers of maritime technology and competence</li> </ol>

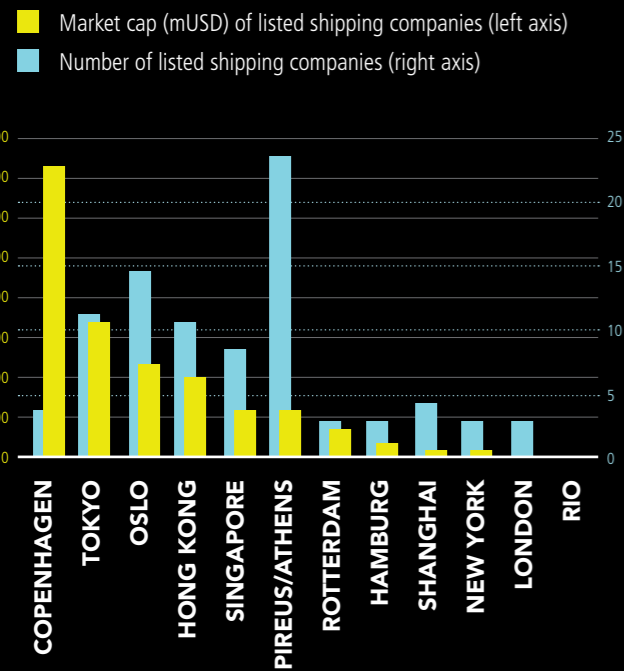


## SHIP OWNERS AND SHIPPING OPERATION

The figure below shows the number of listed companies and their total market capital value in the 12 cities, ranked by market cap (orange bars). In terms of total market cap of listed shipping companies, Copenhagen comes out, perhaps surprisingly, as number one. This is mostly due to the extremely high value of AP Møller (Maersk). Tokyo and Oslo have several companies situated in the city and are thus less dependent on the fortunes of one single company. Piraeus/Athens has by far the largest number of companies, however partly due to the effects of the economic downturn on different shipping segments; their total market value is smaller than the other shipping centers.

### Number and market value of maritime companies in 12 leading maritime cities

January 2012 | Source: Bloomberg



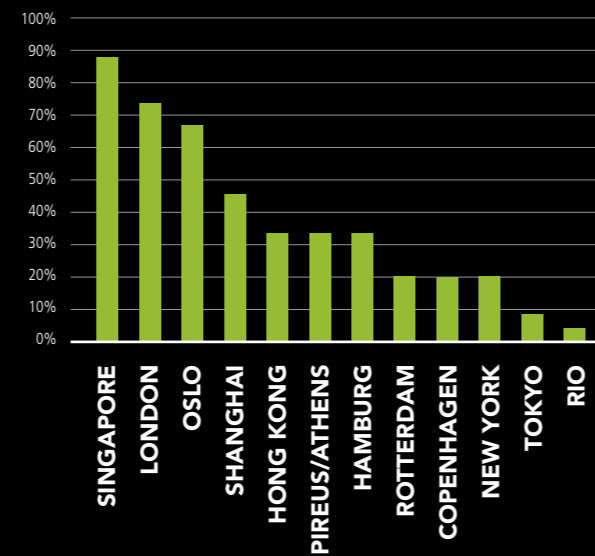
## EXPERT EVALUATIONS OF SHIPPING CENTERS

The figure below reveals the assessment of the industry experts. Singapore, London and Oslo are ranked as the three leading shipping centers, followed by Shanghai and Hong Kong. It is a bit surprising that Tokyo, capital of the world's second largest national fleet, only is regarded as "one of five" among 8% of the experts. This might be due to the fact that the Japanese maritime industry is quite domesticly oriented.

Singapore is judged by the experts to be the most important center. This is not reflected to that extent in the objective data. The impression will partly be remedied by Singapore Ports Authority's massive size. London also seems to do far better among the experts than the quantitative data would suggest.

### Industry experts' judgment of the 5 leading shipping centers of the world

Source: Menonies



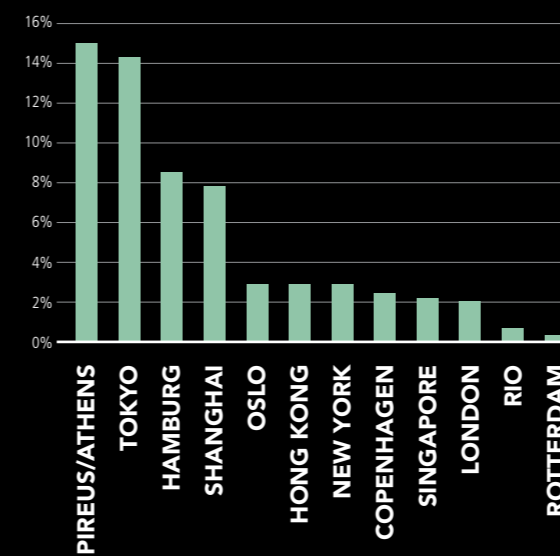
## SHARES OF WORLD FLEET

In the figure below the cities are ranked by the total fleet (in dwt) of the country as a whole. The world's total merchant fleet is still concentrated in Greece and Japan; however China is on the move making Shanghai an ever more important city. In recent years Germany has increased their market share dramatically, but after the financial crisis in 2009 there has been a shake-out, particularly in the container segment.

### Shares of total world merchant fleet

July 1st 2011 | National figures allocated to cities

Source: ISL



## SUMMARY THE LEADING SHIPPING CENTERS

**BASED ON OBJECTIVE INDICATORS**, Piraeus and Tokyo are the leading shipping centers, followed by Oslo. However, the experts see it differently. Actually, Tokyo is ranked as no 11.. London, the global hub of shipping for many decades, is ranked number 11 on the objective measures. In the eyes of the experts it is still one of the leading cities; 3 of 4 experts rank London as one of five.

When we combine the objective indicators and expert judgments (weighted 50% each), Oslo, Singapore and Piraeus take the top three spots in the total ranking of the leading shipping centers. This is due to their consistency both in the quantitative data and in the experts' analysis. Oslo retains a consistent position in the data, never falling below the top five spot, and is the only city that is ranked high on both objective and subjective measures. ■

CITIES	SHARE OF WORLD TONNAGE (NATIONAL)	No OF LISTED SHIPPING COMP.	MARKET CAP. OF LISTED SHIPPING COMP.	AVERAGE RANK	EXPERT RANK	FINAL RANK
OSLO	5	2	3	3	3	<b>3,2</b>
SINGAPORE	9	5	5	6	1	<b>3,4</b>
PIREUS/ATHENS	1	1	6	3	5	<b>3,9</b>
SHANGHAI	4	6	9	6	4	<b>4,9</b>
TOKYO	2	3	2	3	7	<b>4,9</b>
HONG KONG	6	4	4	5	5	<b>5,0</b>
COPENHAGEN	8	6	1	5	6	<b>5,4</b>
HAMBURG	3	7	8	6	5	<b>5,7</b>
LONDON	10	8	11	9	2	<b>5,7</b>
ROTTERDAM	12	7	7	8	6	<b>6,9</b>
NEW YORK	7	7	10	8	6	<b>7,2</b>
RIO	11	9	12	9	8	<b>8,5</b>





## SHIP FINANCE

London and New York are normally regarded as the leading finance centers of the world. Both cities also hold a strong position in maritime finance. The following quotes from two industrial experts illustrates this view:

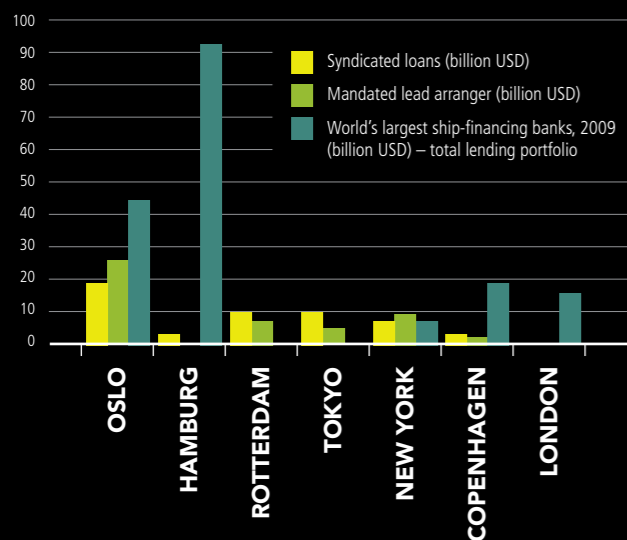
“London stands out. No other city has the in-depth expertise of maritime finance.”

“New York is no 1, because of its ability to tap into a variety of equity capital and debt capital markets.”

However, in terms of ship finance two other cities stand out, Oslo and Hamburg. DNB and Nordea are the two leading ship finance banks measured in terms of book runner and MLA (Mandated Lead Arranger) portfolios (Dealogic, 2011), while Hamburg dominates entirely in terms of total lending portfolio, particularly through (HSH)Nordbank. Hamburg’s position is further strengthened by their neighboring cities of Hannover and Bremerhaven, which also have strong shipping bank sectors. The ranks of the cities based on syndicated loans and lending portfolios are shown in the figure below.

Although Hamburg has the largest portfolio, Norway’s largest maritime banks have the strongest base for syndication of maritime loans. They also enjoy the strongest position as the Mandated Lead Arranger, and follow Hamburg with the third largest lending portfolio.

**The lending ship finance cities – measured in terms of syndicated loans and total lending portfolio**  
Source: Dealogic/DNB markets



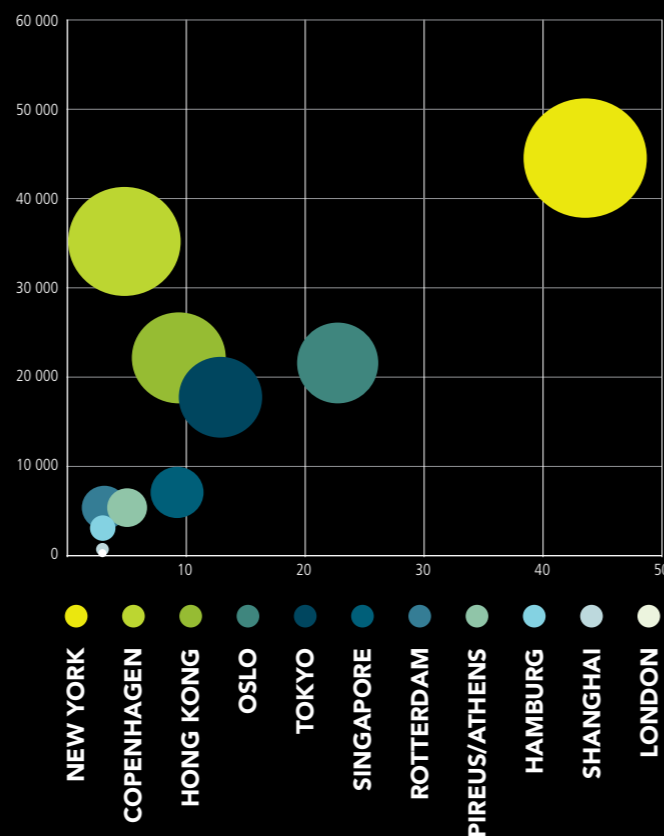
## FINANCIAL CENTERS

Another indicator of a strong maritime financial center is the number and value of maritime companies listed on the city’s stock exchange. The figure below shows that New York is the leading maritime financial center, both in terms of number of listed companies and their total market cap value, although few of the world’s large shipping and maritime companies are located in New York. Copenhagen is number two in market cap, due to AP Møller (Maersk), while Oslo has the second largest number of listed firms on the stock exchange.

The industry experts seem to agree with the important role the New York stock exchanges plays in Maritime finance. As one of the experts states;

“NY has a stronger role in the equity part of shipping finance, with NYSE being a typical primary or secondary listing location. London is more debt financing oriented.”

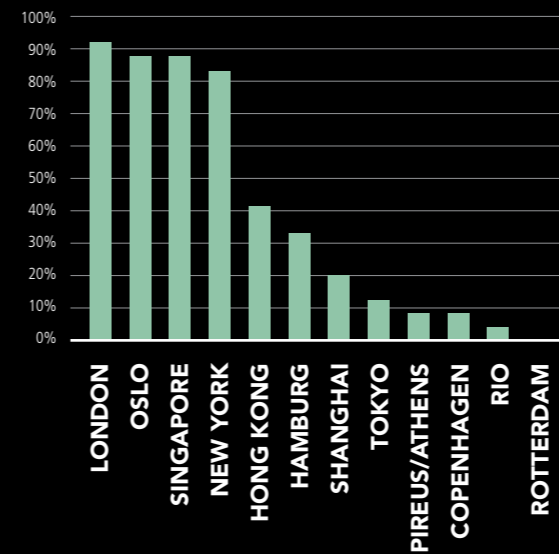
**The leading maritime financial centers of the world**  
Source: Bloomberg



## EXPERT VIEWS OF THE LEADING MARITIME FINANCE CENTERS

There is a strong degree of consensus among the industry experts in regards to the leading maritime finance centers. Four cities are regarded to be among the leading five by more than 4 of 5 experts – London, Oslo, Singapore and New York. This can be observed from the figure below.

**Industry experts’ judgment of the leading maritime finance centers of the world**  
Source: Menon



## SUMMARY MARITIME FINANCE CENTERS

**OSLO IS OVERALL RANKED AS THE LEADING** maritime finance center of the world, due to high scores on all objective indicators and expert judgments. The panel of experts ranks it as the second most important city after London. The quantitative data reveal the importance of both the shipping banks and Oslo stock exchange. New York is number two on the list, due to the role of the stock exchange and high ranks by the experts.

In the case of London, which ranks third on the list, we observe a gap between the objective indicators and the perceptions of the experts. The London stock exchange has few maritime companies listed, and the London based banks’ role in ship finance is limited. However, one of the reasons for the discrepancy, is that most large maritime banks have high-activity branches in London (and New York). But it might also be the case that the impression of London as the leading center for maritime finance is based on past performance, not the current position.

Looking at the objective indicators, Tokyo has an average rank of 4, only beaten by Oslo and New York. One of the industry experts points out their important role:

“Japanese banks play an important role in shipping finance that is often a little overlooked in the larger picture. This is largely related to export financing and large infrastructure projects with maritime content.”

However, few other experts seem to agree; Tokyo is ranked as one of five leading maritime finance centers by as few as 8% of the experts. Hence, Tokyo ends as number seven in the final ranking. ■

CITIES	No OF MARI-TIME FIRMS ON STOCK EXCHANGE	MARKET CAP. OF MARI-TIME FIRMS ON STOCK EX.	MANDATED LEAD RRANGER	LENDING PORTFOLIO	AVERAGE RANK	EXPERT RANK	FINAL RANK
OSLO	4	2	1	2	2	2	<b>2,1</b>
NEW YORK	1	1	5	8	4	4	<b>3,8</b>
LONDON	10	8	6	6	7	1	<b>4,2</b>
SINGAPORE	6	4	7	9	7	2	<b>4,3</b>
HONG KONG	3	4	7	9	6	5	<b>5,3</b>
HAMBURG	9	8	6	1	6	6	<b>6,0</b>
TOKYO	5	3	5	3	4	8	<b>6,0</b>
COPENHAGEN	2	7	5	4	4	9	<b>6,7</b>
SHANGHAI	8	5	7	9	7	7	<b>7,1</b>
PIREUS/ATHENS	11	8	7	8	9	9	<b>8,8</b>
ROTTERDAM	7	8	5	7	7	12	<b>9,3</b>
RIO	12	9	7	9	9	11	<b>10,1</b>





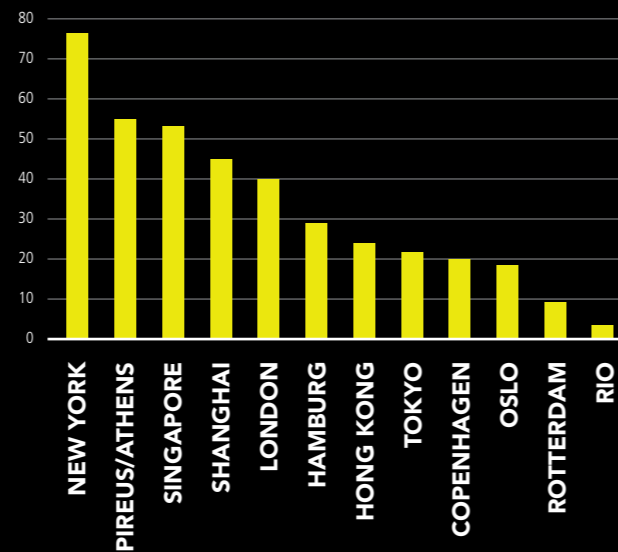
## MARITIME LAW

It is difficult to find relevant statistics to assess the strength of the cities when it comes to maritime law. We have based our indicator on Legal 500, where the number of maritime law firms is listed, with a separation between 1st to 3rd tier firms. There is strong reason to believe that the criteria for getting a 1st tier status vary between the cities, but it makes no sense to make subjective adjustments to the list. The figure below shows the rank of the cities, where a 1st tier maritime law firm gives 3 points, while a 2nd and 3rd tier firm gives 2 and 1 points, respectively.

New York tops the list, while Piraeus, Singapore and Shanghai follow. These three cities are dominated by foreign law firms, particularly branches of English firms. London itself ranks 5th on the list.

### The leading maritime law firms of the world

No of first tier firms=3; second tier=2; third tier=1  
Source: Legal 500io  
Source: Dealogic/DNB markets



## INSURANCE

P&I clubs offer charted members against personal injury to crew, passengers and others on board, cargo loss and damage, oil pollution, wreck removal and dock damage. The market is highly concentrated. The three largest clubs in the world; Gard, UK P&I Club and Britannia, capture more than 40% of the global market. London is by far the strongest maritime insurance city, followed by Oslo, Tokyo and New York.

## INDUSTRY EXPERTS ASSESSMENT

More than 90% of the experts have London on the list of the five leading centers of maritime law and arbitration. The statements below show the view of some of the experts:

"London is the reference point for maritime law and arbitration. It is being dealt with in other locations, but a majority refers back to UK law."

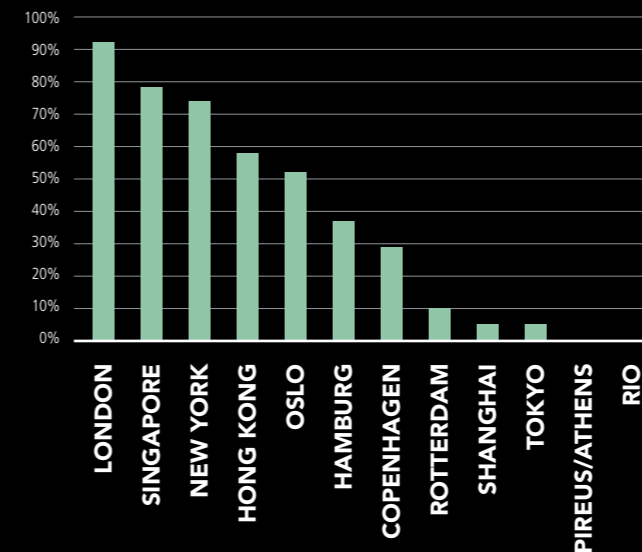
"London is by far the leading center. The most widely used law in maritime business is English Law."

"London stands out as THE most important by far."

London has a clear historical advantage since maritime contracts usually are written within English jurisdiction. The London court of arbitration further reinforces London's position, as does the fact that several specialized law firms within maritime law have their headquarters in London with branches in most shipping centers around the world. This view is reflected by our panel of experts.

### Industry experts' judgment of the leading centers of maritime law and arbitration in the world

Source: Menon



## SUMMARY MARITIME LAW AND INSURANCE

**LONDON IS A CLEAR WINNER WHEN IT COMES** to maritime law and insurance. New York and Singapore follow next. These three cities have high scores on all indicators. The qualitative and quantitative data seems to be relative in sync with London, New York and Singapore clutching 3 of the top 4 spots. A notable exception is Piraeus with its sizeable number of law firms. However this does not say anything about the quality of services provided by the individual law firm. Which center that has the highest quality of service is probably better reflected by our survey of experts, since many of them use these services frequently. ■

CITIES	P&I INSURED TONNAGE, SHARE OF GLOBAL MARKET	MARITIME LAW FIRMS, WEIGHTED BY 1 <sup>ST</sup> TO 3 <sup>RD</sup> TIER	AVERAGE RANK	EXPERT RANK	FINAL RANK
LONDON	1	5	3	1	2,0
NEW YORK	4	1	3	3	3,4
SINGAPORE	5	3	4	2	3,0
HONG KONG	5	7	6	4	5,0
OSLO	2	10	6	5	5,5
HAMBURG	5	6	6	6	5,8
SHANGHAI	5	4	5	9	6,8
COPENHAGEN	5	9	7	7	7,0
PIREUS/ATHENS	5	2	4	11	7,3
TOKYO	3	8	6	10	7,8
ROTTERDAM	5	11	8	8	8,0
RIO	5	12	9	11	9,8





## PORT OPERATIONS

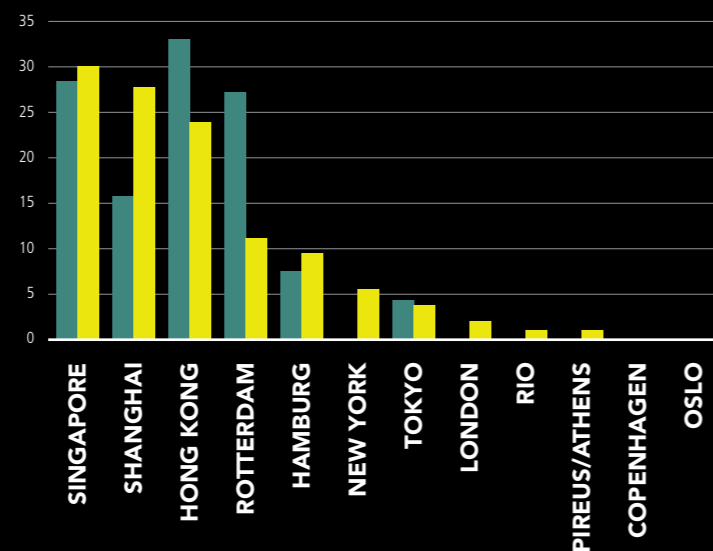
In the figure below two indicators of port operations are illustrated. The green bars show the size of the shipping port companies of the 12 cities, while the yellow bars show the size of the ports in each city, measured by TEUS.

The size of the largest port operators reflects the strength of the Asian maritime centers such as Hong Kong, Singapore and Shanghai. The largest port operators (HPH), APM Terminals and Port of Singapore Authority (PSA) move more than a third of the world's container transport and also covers the three largest ports measured in TEU's, a lot more than the largest European Ports.

In terms of port activity Singapore is the largest shipping port city, followed by Shanghai, Hong Kong and Rotterdam. Hong Kong and Rotterdam are the two leading cities of shipping port companies.

### The largest ports and port operators

■ Largest port operator companies by percentage share  
■ TEUS 2008-2009



## CLASSIFICATION

Ship classification is probably the most concentrated of all maritime services, even though there are a lot of small national companies. Tokyo (Nippon Kaiji Kyokai), London (Lloyd's Register of Shipping), Oslo (DNV) and Hamburg (Germanischer Lloyd) are the four largest, and these four cities hold more than 60 % of the world market.

## INDUSTRY EXPERTS ASSESSMENT

Singapore, Hamburg and Oslo are ranked as the three leading centers of maritime technology and competence, but none of them are ranked as one of five by more than 70% of the experts. This may be a reflection of the fact that maritime technology and competence probably is the area where the 12 selected cities face the strongest competition from cities not included in our survey. One of the experts expressed the following:

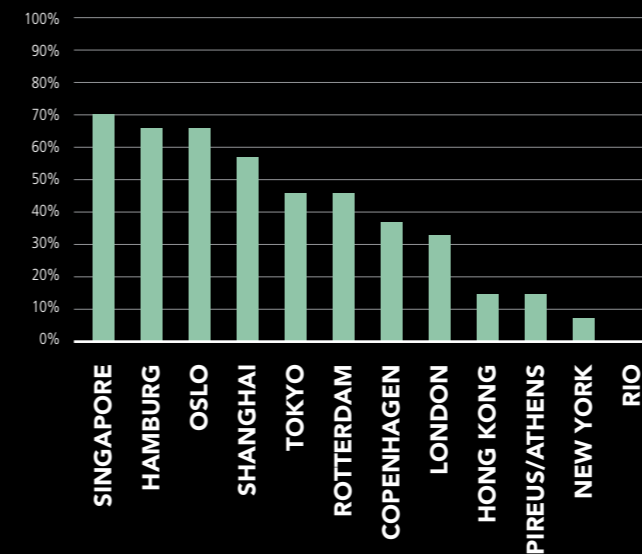
"I miss cities like Seoul, Ålesund, Kobe, Danang etc.. Some of the five listed I find less relevant"

The next quote points to the fact that technology centers often are found outside the largest cities, but that they normally are complementary:

"In Norway Oslo is important because of DNV. If you add Bergen, Ålesund and Trondheim we really stand out towards all other centers. This is Norway's main competitive strength now and will be in the future."

### Industry experts' judgment of the leading centers of maritime technology and competence in the world

Source: Menon



## SUMMARY MARITIME TECHNOLOGY AND COMPETENCE

**MARITIME TECHNOLOGY AND COMPETENCE IS hard to grasp by objective indicators. Ideally we would use measures of R&D, education, innovation and personnel markets. However, we have chosen to rely on two indicators that are technology intensive; classification and port operations.**

When objective indicators and expert judgments are combined, Singapore turns out to be the leading center of maritime technology and competence, followed by Hamburg, Oslo, Shanghai and Tokyo. ■

CITIES	PORTS AND PORT OPERATORS	CLASSIFICATION, % OF GLOBAL TONNAGE	AVERAGE RANK	EXPERT RANK	FINAL RANK
SINGAPORE	1,5	6	3,8	1	<b>2,4</b>
HAMBURG	5	4	4,5	2	<b>3,3</b>
SHANGHAI	3	6	4,5	4	<b>4,3</b>
OSLO	9,5	2	5,8	3	<b>4,4</b>
TOKYO	6,5	3	4,8	5	<b>4,9</b>
ROTTERDAM	3,5	6	4,8	6	<b>5,4</b>
LONDON	7,5	1	4,3	8	<b>6,1</b>
HONG KONG	2	6	4	9	<b>6,5</b>
COPENHAGEN	9	6	7,5	7	<b>7,3</b>
NEW YORK	6,5	5	5,8	11	<b>8,4</b>
PIREUS/ATHENS	8,5	6	7,3	10	<b>8,6</b>
RIO	7,5	6	6,8	12	<b>9,4</b>



# CONCLUSION

## – THE LEADING MARITIME CITIES TODAY

### TOTAL RANK

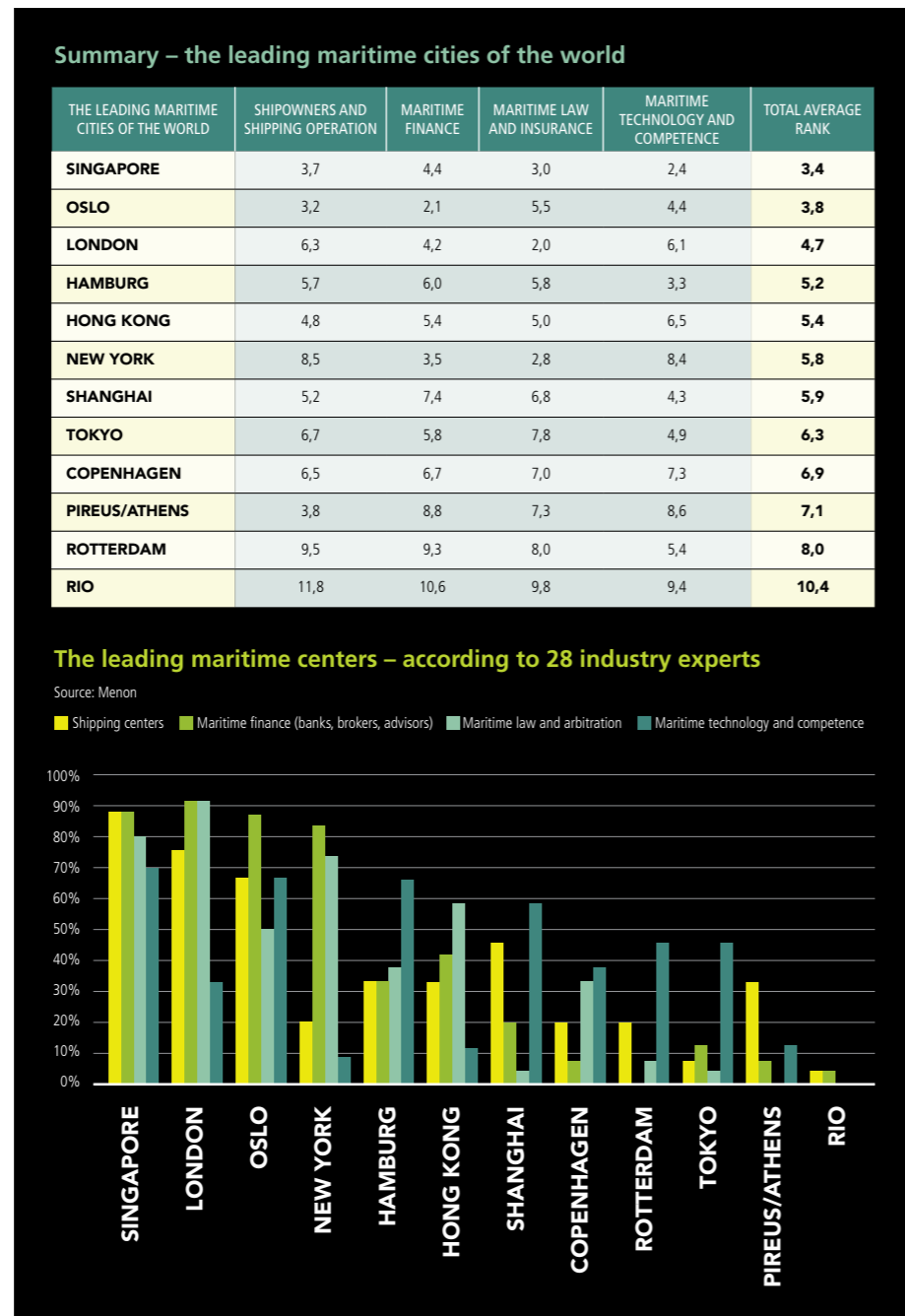
Singapore seems to be the strongest city based on both quantitative data and expert reviews, closely followed by Oslo and London. Strong competition between the other cities gives an impression of the fleeting standings between the maritime centers. One of the experts explains the role of Singapore which seems to underline the results from the data.

“Singapore stands out for the following reasons: 1) A government strategy to promote shipping from integration of the maritime and port authority with the tax system, with investment, business set up. 2) An integrated hub involving shipyards, vendors, finance, legal, insurance, ownership, operations, commercial. 3) The true international flavor involving dry bulk, tankers, gas, containers, offshore marine services, E&P sectors”.

There are some discrepancies between the objective and the qualitative data. Tokyo seems to be undervalued as a shipping center, probably due to their domestic orientation, but none the less an important maritime city. The quantitative data is also more skewed towards the Asian maritime centers, but there are small variations between the 3 and 6 spot. London is out of the top 5 in the quantitative data, maybe indicating an overestimation of the importance of London’s role today. The expert panel disagrees and places London well within the top five maritime centers.

### TOTAL RANK – ACCORDING TO THE EXPERT PANEL

In the figure below the ranks of the industry experts on each of the four mari-



time areas are summarized. The table indicates that only Singapore is viewed as a complete maritime hub. Singapore is regarded as one of the five leading cities by more than 70 % of the experts on all four areas. London does well in three

areas, but fall behind in regards to maritime technology and competence. New York has a narrower profile, with finance and law as main areas, while Oslo is the city that comes closest to Singapore in terms of completeness. ■

# LOOKING FORWARD

## – THE LEADING CENTERS TEN YEARS FROM NOW

FINALLY, WE ASKED THE EXPERTS TO look forward and make a prediction about the leading maritime cities 10 years from now. The figure below shows the results in orange bars, while the blue bars show the average score of the four areas evaluated by the experts.

The experts agree that the future lies in the east, more specifically in Singapore and Shanghai, while Hong Kong is predicted to keep its’ current position. London and Oslo are the two cities with the largest negative gap between current and future position. Rio, a city that falls far behind the others as of today, is expected to show the sharpest growth in the future.

The experts expressed different views on future developments. One of the experts summed up his view in the following way: “London and Oslo could probably well maintain their leading roles. Generally, there will be a rising importance of Singapore and Shanghai because of momentum in Asia’s economic development and seaborne trade. Rio is likely to rise in importance because of large growth in oil, gas, iron ore and grain/soybean exports, and a general drive towards more downstream involvement”

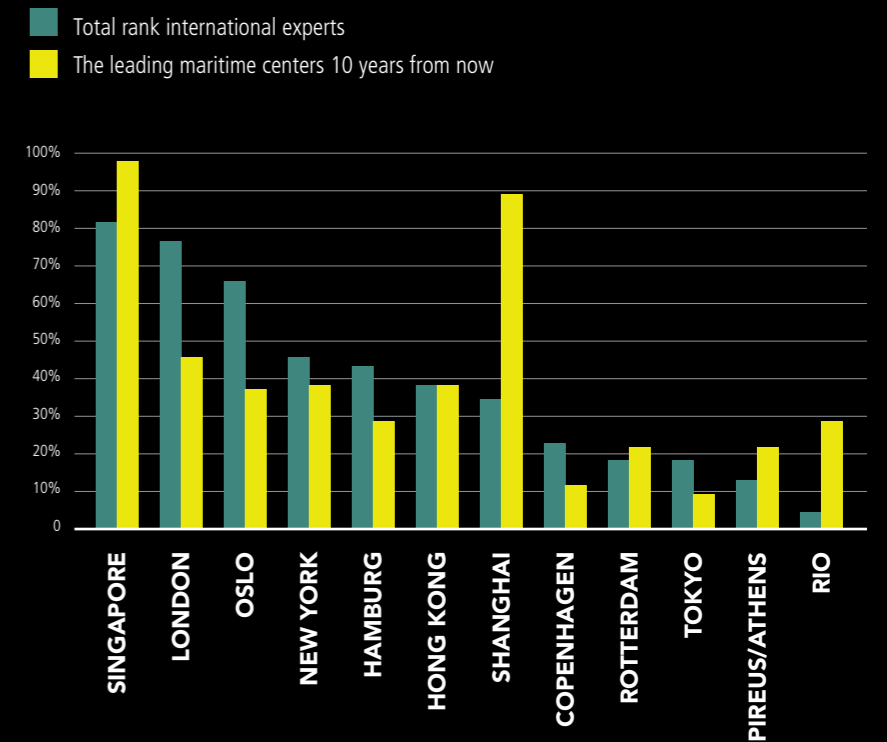
There is no doubt that the industry has strong faith in the future of Singapore as a maritime center:

“Singapore will still be there because it is embedded into the whole economic strategy of the city state.”

“Singapore has the head start on other Asian competitors and will remain no 1. Oslo has a solid foundation and will ride on the back of the offshore industry

### The leading maritime centers of the world today and 10 years from now – according to 28 international experts

Source: Menon



development to remain in a top 3 position. Watch the Chinese. They put weight behind their ambitions.” ■



