



Norsk Industri

Norwegian Maritime Equipment Suppliers 2015

KEY PERFORMANCE INDICATORS AND FUTURE EXPECTATIONS



OCTOBER 2015

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Preface

Menon Business Economics have written this report on behalf of the Maritime Department of the Federation of Norwegian Industries. It is the second such report focusing on Norwegian maritime equipment suppliers.

Our industry is facing uncertain times and we base this report upon figures and statements from leading personnel in our industry to establish the state of business today and in addition to try to establish a consensus of where the business is heading. It is only natural that the outlook is somewhat more pessimistic now in October 2015 than in the spring of 2014 when we published our previous report.

Again, we are somewhat amazed at the sheer volume of business in the equipment industry and the extremely high percentage of exports. There is much talk in Norway about the need to transform from an oil and gas dependent economy to other industries. In this regard, the maritime industry is large and well placed; we compete on the international marketplace, winning orders in distant markets for very technologically advanced products.

It is said that the maritime industry in Norway is “the world’s most complete value chain”, with leading enterprises in all sectors and industries that need to be involved to finance and build ships and vessels. These may be financial institutions, shipping lawyers, design companies, equipment manufacturers, classification societies, shipyards and of course ship owners, the end customer. This value chain, or cluster, is important for our industry to thrive. We trust that this cluster will help bring us through the challenging times ahead.

We would like to thank Menon Business Consulting for their dedication and the thoroughness of their work in compiling this study, and we trust the reader will find the report useful. All feedback is welcome!

Oslo, 20 October 2015

Lars Gørvell-Dabll

Director, Maritime Dept., Federation of Norwegian Industries

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1. Summary

The turnover of Norwegian ship equipment manufacturers reached almost NOK 80 billion in 2014; they achieved wealth creation of NOK 23 billion and employed more than 21,000 people. The industry is **a significant part of the Norwegian maritime business** – a business that may never have been in a stronger position in Norway than it is today. Maritime equipment manufacturers experienced tremendous growth from 2004 to 2008, when sales almost trebled and profitability rose. The industry experienced a much lower rate of growth in the years since the financial crisis, and in 2010 and 2011 turnover dropped. This trend turned around in 2011 and since then the companies have seen an annual increase of sales of 10 percent.

The companies within the industry are exposed to **considerable international competition**, illustrated by the fact that almost 90 per cent of turnover comes from markets outside of Norway. Norwegian based companies have been able to take world-leading positions because of their ability to innovate and increase their productivity. The companies deliver two-thirds of their products and services to the global offshore market, making them highly dependent on the development in this market. **In total, ship's equipment suppliers export goods and services to a value of almost NOK 60 billion.** This is equivalent to 9 per cent of Norway's total exports of goods and services (excluding oil and gas). When we include the suppliers of drilling equipment to floating rigs and structures, exports increase to NOK 100 billion or 15 per cent of Norwegian exports. This is more than the total export from other leading export industries in Norway such as seafood and export of metals.

For 2015, the turnover is expected to fall by 3 per cent. The ship equipment producers are highly dependent on the offshore market, and are thereby strongly affected by the falling demand for new offshore vessels. We see a clear shift in the view as regards future prospects compared to our last report in 2014. The current order books are approximately 90 percent of the yearly turnover and have fallen sharply in the past 12 months. Two-thirds of the companies also expect no growth or a decline in turnover from 2015 to 2016.

Møre og Romsdal and Hordaland are by far the two largest counties in terms of ship's equipment production. Together they are responsible for 40 per cent of the industry's total wealth creation. At the same time we see that a total of 11 out of the 19 Norwegian counties have a wealth creation of more than NOK 500 million, implicating that the **suppliers of ship's equipment are important throughout large parts of the country.**

2. *The maritime industry – one of Norway's biggest and most important industries*

Maritime equipment suppliers are part of one of Norway's biggest and most important industries: the maritime industry. It is important to look at equipment suppliers within a larger context since the development experienced by equipment producers is and will continue to be dependent on the strength of this entire segment. The maritime industry in Norway is strong and has a long history. In 2013 the industry was behind collective wealth creation of NOK 175 billion in Norway and employed more than a hundred thousand people. The industry's share of the total wealth creation within the Norwegian economy is around 12 per cent – excluding oil companies. Wealth creation has never been higher than now, and the industry has perhaps never been in such a strong international position as it is today. The industry is also represented along Norway's entire coastline and, in certain coastal communities, it totally dominates wealth creation in the local economy.

Norway is one of the world's leading maritime nations. Norway is home to only one thousandth of the world's population yet the country is a major power within the international maritime industry. Norwegian-controlled shipping companies own around six per cent of the value of the world's fleet of ships, and Norwegian companies are leading in a large number of fields. In ship financing, in legal institutions, in certification, and in the construction of ship equipment and drilling equipment, Norwegian companies are among the best known. In addition, Norwegian companies are responsible for a constant flow of innovations in ship design, propellers, equipment and services. Many of these innovations contribute to improving the environment and climate.

One of the reasons for the Norwegian maritime industry's international success is that the compa-

nies have had a high growth in productivity – in other words, they are managing to produce more with fewer employees. This has led to higher levels of productivity, but also increased wage levels. In fact, the average wage level in the Norwegian maritime industry is fifty per cent higher than the average for Norwegian companies. This productivity trend can again be explained by two other characteristics of the industry in Norway: it is knowledge-based and innovation-driven. It is the people who possess the knowledge and create the innovations. Knowledge is developed and distributed in the interaction between the players, and innovations are created and implemented within that same interaction. In the research project called "A knowledge-based Norway", the interaction between experience-based skills and research-based knowledge was identified as one of the industry's most important competitive advantages. Operational skills from actual working at sea are a key factor in this interaction.

Delimiting the maritime industry

The size and significance of any industry is determined by how it is defined, and it is therefore important to have a clear and concise definition which sets clear limits on what is to be included and what is to be excluded. Menon has developed the following definition of the maritime industry as a whole through a series of projects:

– All businesses that own, operate, design, build, supply equipment or specialist services to all types of ships and other floating entities

In addition we have subdivided the industry into four main groups and 12 subgroups:

- **Shipping companies**
 - Offshore
 - Shortsea – coastal traffic



Far Samson, built by Vard in Norway. A multifunctional subsea service vessel that was awarded Ship of the year award in 2009. The world's most powerful offshore vessel. Photo: ©Rolls-Royce

- Deepsea – traffic that crosses oceans
- Drilling and production companies (rigs)

- **Maritime service providers**

- Technological services
- Financial and legal services
- Trade
- Port and logistics services

- **Shipyards**

- **Maritime equipment producers**

- Ship's equipment
- Drilling and offshore equipment for ships and rigs
- Specialist equipment for fishing boats and fish-farming facilities

Maritime equipment suppliers – definition and subdivision into groups

This study focuses on maritime equipment suppliers. Because the industry is complex and the same company may supply products or services to areas outside of the maritime industry, it has been important to look more deeply into the scope of

each company. We have narrowed the definition of maritime equipment manufacturers as follows:

– Specialist equipment suppliers for ships and other floating entities.¹

We have subdivided the maritime equipment manufacturers into five subgroups, plus drilling equipment. In the report we would like to direct the main focus on the first main group: **Ship equipment.**











The following figure illustrates how we have defined the equipment suppliers and subdivided them into subgroups. For each individual subgroup, the logos of two players in the subgroup have been highlighted. It is worth mentioning that we define maritime equipment suppliers rather more broadly in this publication than in other contexts, since we are also including design activities and trading companies. In other Menon reports (such as Maritim Forum's *"Maritim verdiskapingsbok"* [Eng: Maritime Wealth Creation Book]) trading companies and design are included under maritime *services*.

¹ Some of the equipment is also installed on rigs and/or FPSOs. An FPSO (Floating Production, Storage and Offloading) is a floating, mobile platform used in the offshore oil and gas industry for processing and storing petroleum during production at an oil field. As a rule, FPSOs are normally designed like a ship, but units such as Sevan cylindrical-hulled vessels and spar buoys are also considered to be FPSOs.

SHIP'S EQUIPMENT

Ship's equipment consists of five subgroups:



- **Mechanical equipment** is a relatively extensive group that includes suppliers of cranes, winches, propellers and engines. This is equipment that has to carry out mechanical operations such as lifting operations or contributing to propelling ships forward.
- **Electrical and electronic equipment** includes operations that focus on electrical and electronic components. That could include specialist hardware, software, electrical propulsion systems, bridge equipment or DP systems².
- The group dealing with **design** typically includes ship design companies such as Møre Maritime. The group also includes companies with a rather broader focus such as LMG Marin, which offers design packages for ships and rigs.
- **Other operating equipment** involves manufacturers of equipment necessary for everyday ship operations. This includes suppliers of items such as marine paint, lubricants, cables, chains and lifeboats.
- The last group under ship's equipment is **trade**. This includes companies that buy and sell goods for operating and maintaining ships, or act as dealers for equipment to other players such as shipyards in Norway and abroad.

 <p>Mechanical equipment • Cranes, winches, propellers, engines etc</p>	
 <p>Electrical and electronic equipment • DP, software, specialised hardware, bridge equipment, sensors etc</p>	
 <p>Design • Ship design</p>	
 <p>Other operating equipment • Paint, lubricant, cables, chains, life-boats etc</p>	
 <p>Trade • Agents, wholesalers and distributors</p>	

DRILLING AND OFFSHORE EQUIPMENT FOR SHIPS AND RIGS

Drilling and offshore equipment for ships and rigs is today almost totally dominated by a few companies which principally supply drilling packages

to rigs. This includes complex and expensive components such as BOPs³, drill bits, risers and the supply of services related to these.

 <p>Drilling and offshore equipment for ships and rigs • Drilling packages and related equipment, etc.</p>	
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² Dynamic positioning (abbreviated "DP") are systems for keeping ships or other vessels such as rigs or FPSOs in the same position above the seabed without the use of anchors, and instead utilizing propellers and thrusters.

³ BOP (Blowout preventer) is a large valve that envelops an oil well. It is positioned on the seabed or on the platform deck and is intended to stop any potential blowouts in conjunction with drilling operations.

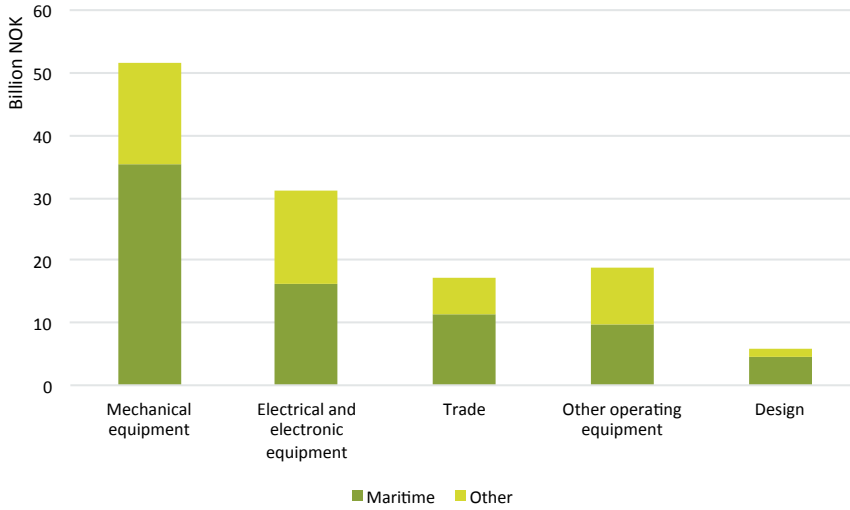


Figure 2-1: Turnover for ship's equipment suppliers broken down into maritime and other turnover 2014.
SOURCE: MENON (2015)

Focus on only the companies' maritime activity

Another issue when delimiting an industry is the issue of how great a proportion of a company's turnover must be maritime to enable it to be included in the analysis. A normal rule of thumb in other projects has been that at least 50% of revenue must be from the maritime industry to ensure inclusion – and then the entire turnover is included. In this survey, we have increased the level of precision and have identified the proportion of each individual company's turnover that is maritime-related. This means that companies such as ABB, Siemens and Jotun, which would normally not have been defined as players in the maritime field (since they have less than 50% of their turnover oriented towards maritime business), will be included in this survey, but then only with the maritime proportion of their turnover. The graph below shows the companies' total turnover and the maritime proportion of that. This indicates that the proportion of the company's turnover varies from approximately 100% for ship design to around half for electrical and electronic equipment. In the report, the only figures presented will be those relating to the maritime part of operations. As the figure below shows, the total turnover within the various

subgroups would have been much higher if all operations in the various companies had been included.

The ship's genset, switchboard, propulsion and thruster control systems are fully integrated to ensure seamless ship operation. Photo: Siemens AG



3. Norwegian ship's equipment – close to NOK 80 billion in turnover and more than 20,000 employees

The total turnover from the manufacturers of ship's equipment amounted to NOK 78 billion in 2014. This was equivalent to wealth creation⁴ of NOK 22.9 billion, a rise of NOK 1.7 billion in the past year alone. This wealth creation was generated by 21,000 employees. That is to say that each employee contributed, on average, NOK 1.1 million to the Norwegian GNP.

In addition, drilling equipment generated wealth creation equivalent to NOK 11.9 billion. Combined with ship's equipment, these groups were responsible for total wealth creation of just under NOK 35 billion in 2014.

If the figures are broken down into subgroups, we can see that mechanical equipment is clearly the largest single group, measured in terms of turnover, wealth creation and employment. Next come electrical and electronic equipment, trade, other operating equipment and ship design. The graph below

2011 marked a turning point for the industry

After a period of strong growth from 2004 to 2008, manufacturers of ship's equipment were affected badly by the financial crisis in 2008. Turnover fell by more than 20 per cent in the

Sub-group	Turnover (NOK bn)		Wealth creation (NOK bn)		Employment	
	2009	2014	2009	2014	2009	2014
Design	3.7	4.4	0.9	1.2	793	1 050
Other operating equipment	7.2	9.8	2.4	3.1	2 948	3 161
Trade	11.3	11.5	2.2	2.5	2 370	2 449
Electrical and electronic equipment	12.6	16.3	4.4	6.0	4 190	4 996
Mechanical equipment	33.5	35.4	9.7	10.2	9 360	9 674
Ship's equipment	68.2	77.5	19.7	22.9	19 662	21 331
Drilling equipment	28.1	46.3	8.1	11.9	3 342	5 614
Total for all equipment supplies	96.3	123.8	27.7	34.9	23 004	26 945

FIGURE 3.1: Key performance indicators for manufacturers of all types of maritime equipment, 2009 and 2014.

SOURCE: MENON (2015)

⁴ An industry's size can be measured in various ways. The best measurement, in our opinion, is wealth creation. This concept is often used for different phenomena, but it does have a precise and unambiguous meaning. Wealth creation is calculated quite simply as the company's turnover minus external purchases of goods and services. At the same time, this means that the company's wealth creation is equivalent to the total of payroll costs and operating profit before deductions and write-downs. The maritime industry's wealth creation is therefore the total of payroll costs and EBITDA in all of the companies (EBITDA is the abbreviation for Earnings Before Interest, Taxes, Depreciation and Amortization). The total of all Norwegian companies' wealth creation is equivalent to the contribution made by trade and industry to GNP.

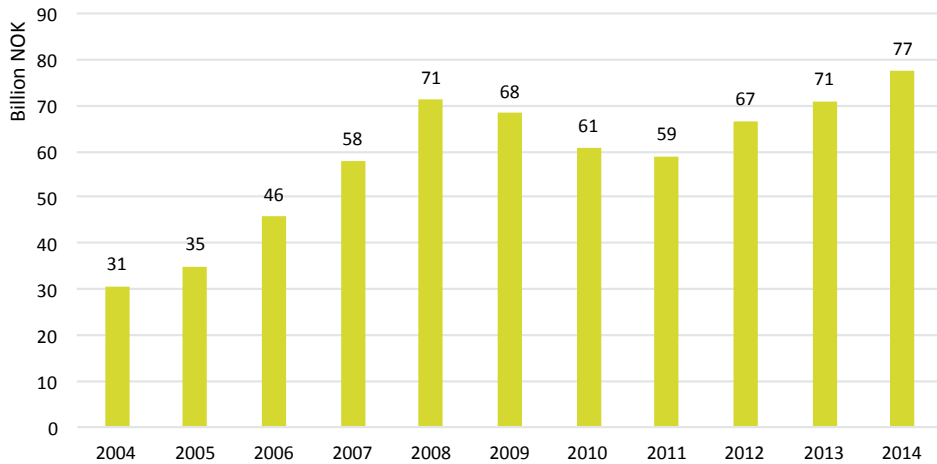


FIGURE 3-2: Turnover for Norwegian manufacturers of ship's equipment, 2004-2014. SOURCE: MENON (2015)

three following years with a particularly steep fall from 2009 to 2010. 2011 seems to be a turning point for the industry, and since then turnover has increased each year. Turnover in 2014 was almost ten percent higher than the old record year of 2008.

The maritime equipment manufacturers are much more exposed to changes in international economic conditions than the Norwegian economy in general. While the growth in turnover in the Norwegian economy⁵ was around 6% from 2008 to 2010, turnover for maritime equipment manufacturers dropped by almost 20%. In the last three years, the turnover has increased steadily again, ending at 77 billion in 2014, a growth of 31% since 2011. The manufacturers of mechanical equipment were hit particularly hard in the aftermath of the financial crisis, but the majority of companies within the industry experienced a severe drop from 2008. One group that was hit especially hard by the financial crisis was Bergen-based FRAMO (Alfa Laval purchased the company in 2014). FRAMO saw a fall in sales close to 50 percent from 2008 until 2011.

FRAMO's downturn highlights an interesting point regarding the economic structure of ship's

equipment suppliers. Relatively speaking, it is dominated by a handful of individual companies, i.e. Rolls Royce, Kongsberg Maritime, ABB and Frank Mohn, who are collectively responsible for more than a third of the wealth creation for maritime equipment in 2014.

Ship's equipment producers' wealth creation equalled NOK 23 billion in 2014

While turnover may vary strongly from year to year, the development in wealth creation has been rather more stable. From 2004 to 2008 wealth creation in the industry almost doubled, and the growth was relatively evenly spread between the various subgroups. After 2008, wealth creation has receded somewhat, but since 2010 the wealth creation again increased, by 15 percent. The last four years have seen a strong growth especially with producers of electrical and electronic equipment, design and other operating equipment. The growth in production of mechanical equipment has been weaker, mainly related to a weak development within Rolls-Royce Marine.

⁵ Excluding the oil operators.

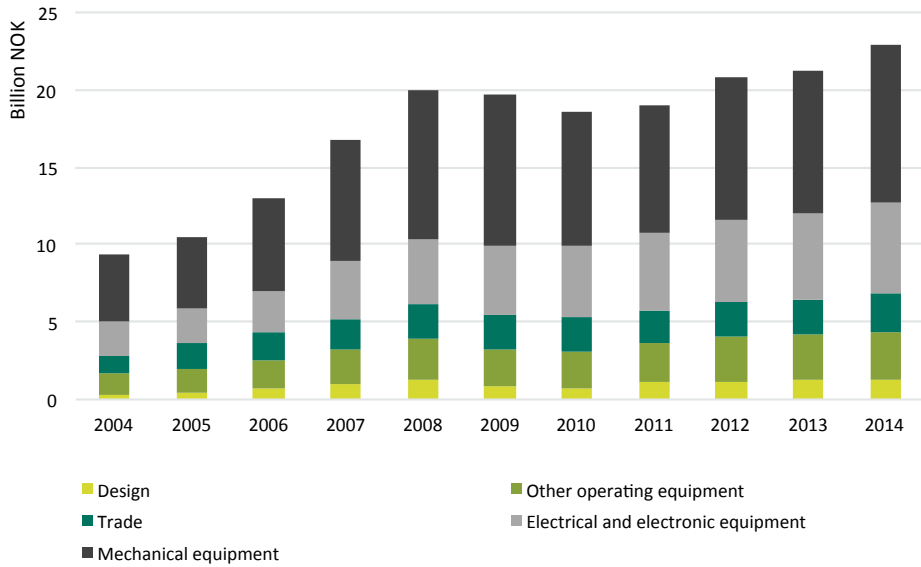


FIGURE 3-3: Wealth creation among ship's equipment manufacturers broken down by subgroup, 2004-2014.

The pace of growth for the equipment manufacturers has been high the last two years

If the growth in wealth creation from the period before the financial crisis is compared to the subsequent period, it is evident that the growth in wealth creation has dropped considerably. From

2004 to 2008, there was annual wealth creation of 20 per cent, while growth in the subsequent four years was virtually non-existent. In other words, there has been a distinct change in pace in the industry's development⁶. Since then the annual growth in wealth creation has been 5 percent

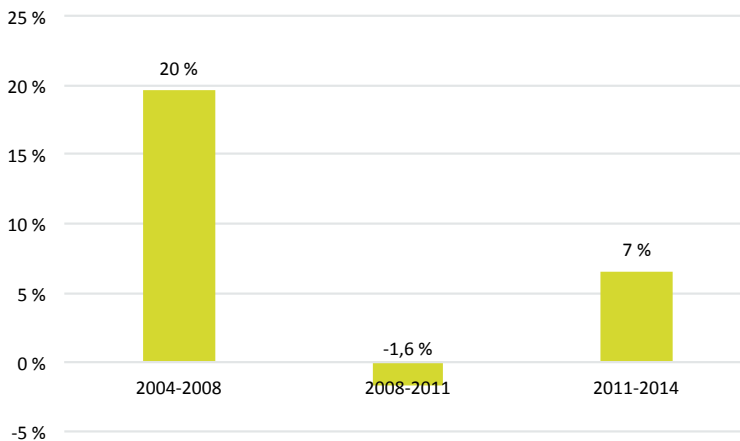


FIGURE 3-4: Annual growth in the wealth creation for ship's equipment during the periods 2004-2008 and 2008-2014.

SOURCE: MENON

⁶ Growth from 2004-2008 has perhaps also been rather over-valued due to survivor bias. That is, that in our choice of companies we have naturally managed to follow the development of only companies that have not closed down or gone bankrupt.

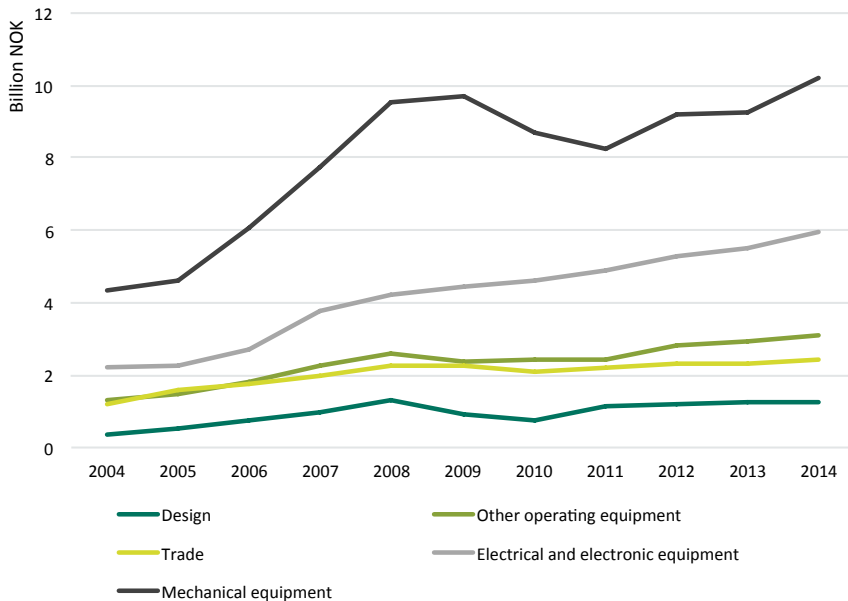


FIGURE 3-5: Developments in wealth creation for the various subgroups, 2004-2014.

If the growth is broken down into the various subgroups, we see that the trend has varied somewhat between those groups. Whereas the groups grew relatively equally during the period before the financial crisis, the trend afterwards has been different. Wealth creation within the mechanical equipment group has dropped by 6 per cent since 2008, while electrical and electronic equipment was affected to a much lower extent, and has increased its wealth creation by 40 per cent since the financial crisis struck. At the same time, it is important to stress that the underlying trend since the start of the new century has been positive. For trade and manufacturers of other operating equipment, the trend has been relatively uniform throughout the entire period.

The counties of Møre og Romsdal and Hordaland account for almost half of the industry's wealth creation

If wealth creation is broken down on a regional basis, it is evident that there are two counties that clearly dominate the statistics: Hordaland and Møre og Romsdal. These two counties are responsible for 40 per cent of the wealth creation

for suppliers of ship's equipment in 2014. Again, these counties are dominated by the operations of two companies in particular: Rolls Royce in Møre og Romsdal and Framo in Hordaland. Both companies have seen strong growth and periods of decline. Framo's turnover fell strongly after the financial crisis, and has later increased. Rolls Royce Marine on the other hand, increased its turnover throughout the crisis until 2010. Since then the turnover and profitability for Rolls Royce has fallen quickly, and recently the company announced that it will reduce the number of employees in Norway. The development in Møre og Romsdal and Hordaland can mainly be explained by the development of these two industrial locomotives.

It should also be noted that a total of 11 of Norway's counties are represented in the figure above by wealth creation of more than NOK 500 million. In other words, the industry is significant throughout large parts of the country, although Western Norway dominates by having more than 50 per cent of wealth creation.

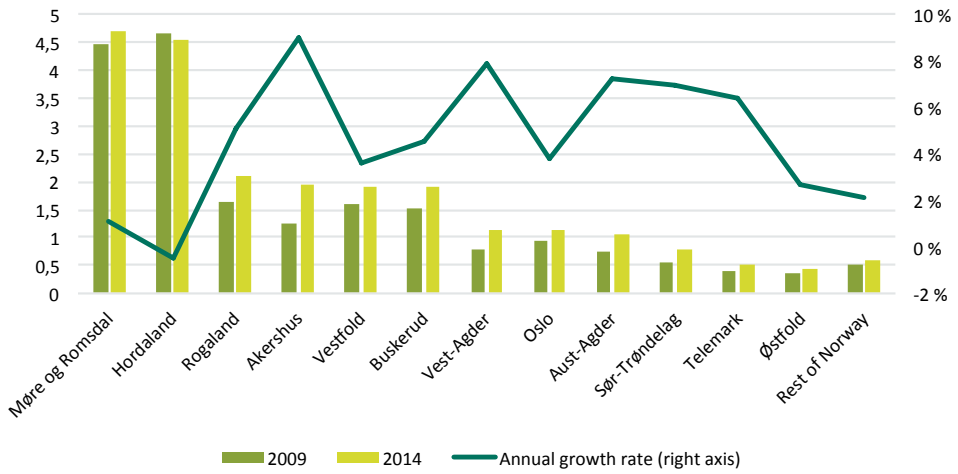


FIGURE 3-6: Wealth creation in 2014, by county, and annual growth in wealth creation over the past five years. SOURCE: MENON (2015)

Profitability stable at 6-8 per cent operating margin

Despite major variations in economic conditions during the period 2004 to 2014, ship's equipment suppliers have experienced a relatively stable operating margin of between 5 and 8 per cent. The operating margin has largely followed the trend in turnover, but since 2011 we have experienced

a divergence between profitability and turnover growth. While the turnover has increased since 2010, the profit margin has kept falling. The development from 2013 to 2014 has been positive, but we have to go back to 2005 to find a weaker profit margin than the companies experienced in 2013 and 2014. The prospects for 2015 and 2016 are also weak as activity is expected to fall.

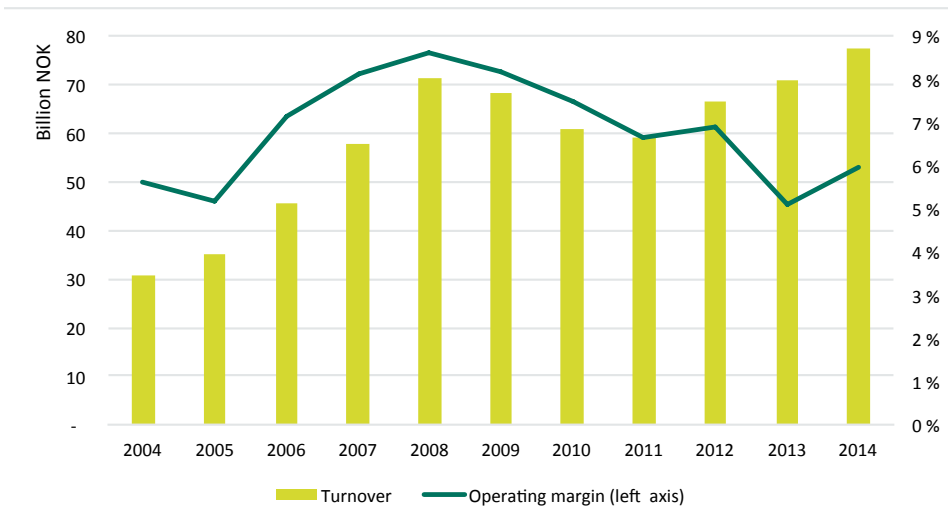


FIGURE 3-7: Turnover and operating margin⁷ for ship's equipment suppliers, 2004-2014. SOURCE: MENON

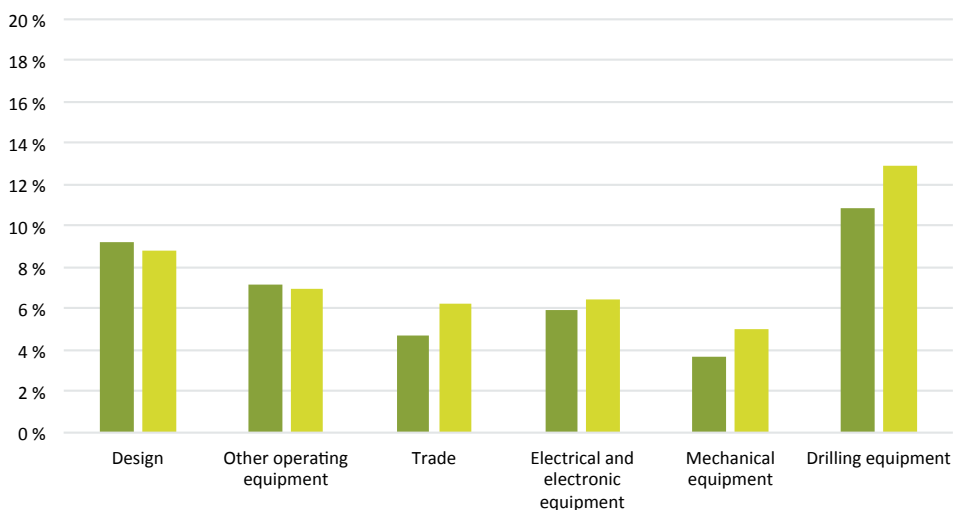


FIGURE 3-8: Operating margins among manufacturers of ship's equipment and other equipment, 2013 and 2014.

SOURCE: MENON

Although profitability is stable for the industry as a whole, there is naturally a significant variation between the individual companies. There is also some variation between the various subgroups. During the period 2004-2014, the average operating margin for the whole group was 6.8 per cent.

A profit margin of 6.8 per cent could generally be regarded as satisfactory and is equivalent to the average operating margin in Norwegian trade and industry⁷ during the same period. At the same time, the next graph shows that the operating margin was much higher for drilling equipment in 2013 and 2014. The drilling equipment industry is dominated by large individual players such as NOV and MH Wirth, which have both delivered good results in recent years. Another relevant comparison would be the profit margin for Norwegian yards. While the shipyards' operating margins have historically been a few percentage points lower than those of the equipment suppliers, the difference in margins has been smaller in recent years. This is probably related to higher

than normal returns in yards, rather than weak performance by the equipment manufacturers.

The offshore market is the main market for the equipment manufacturers

Figure 3-9 below displays the turnover share from offshore markets for each subgroup. Almost two-thirds of the equipment manufacturers' turnover are sales related to the offshore oil and gas market⁹. This means that the dependence on this market is high and that the expected fall in this market over the next few years will force the producers to either produce equipment for new markets or reduce their activity. The remaining third are sales relating to the merchant fleet or speciality fleet such as navy, fishing vessels or vessels for the marine industry. Looking at the different groups, we can see that the dependency on the offshore market is high in all groups, but higher for producers of mechanical equipment and designers compared to producers of electrical and electronic components and other operating equipment.

⁷ Operating margin is measured as operating profit as a percentage of turnover.

⁸ Compared to trade and industry excluding oil operating companies and the financial industry.

⁹ There is some uncertainty around the share as the number of companies answering this question has been low and it has been difficult to estimate the share for the remaining companies.

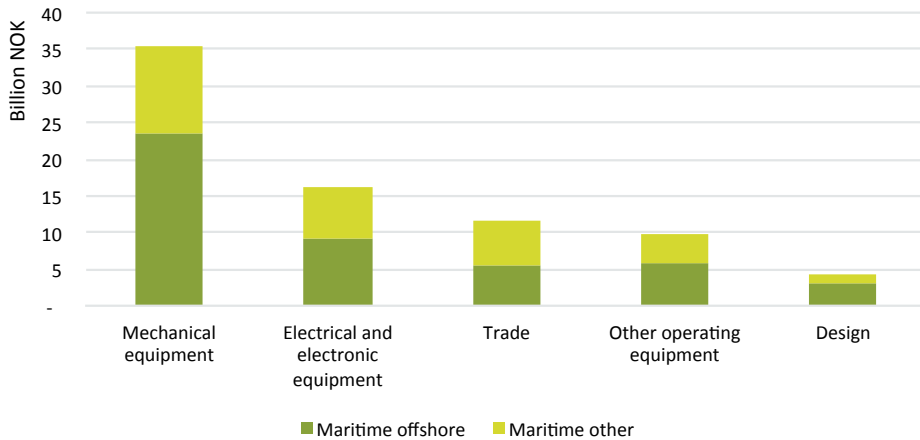


FIGURE 3-9: Share of the maritime turnover from offshore markets, 2014. SOURCE: MENON (2015)

Spare parts and service account for around 15 percent of the turnover

Our survey indicates that around 15 percent of the companies' turnover is related to service and spare parts¹⁰. The share of the turnover relating to spare parts and service is interesting for two reasons. Firstly, the profit margin on such offerings is often higher than for regular sales of equipment. Secondly, it could be an interesting business as sales often are more stable than for the equipment itself. Most maritime equipment is sold to yards to be utilized in new builds, and this market can be highly volatile, while the market for spare parts and service is more stable as the total world fleet is more stable. It will be interesting to follow the development of this percentage in future reports.

The share of spare parts and service ("aftersales") varies between the different segments. While the share is a little higher than the average for electrical and electronic equipment, it is significantly higher for other operating equipment. This is due to the high share of service relating to sale of lifeboats where Harding and Norsafe are world-leading. For mechanical equipment, the share is lower than the overall average.

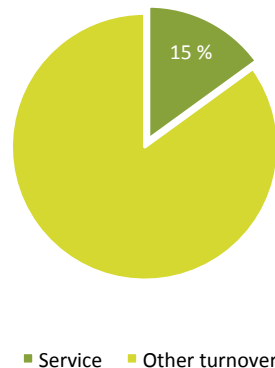


FIGURE 3-10: Share of turnover from spare parts and services, 2014. SOURCE: MENON (2015)

¹⁰ Trade is not included here. Because of a low response rate on this question, combined with little information on this subject from other sources, this figure is uncertain.

4. Almost 90 per cent of ship's equipment is exported

Maritime industry is by its nature international, the end product being shipping of natural resources and goods between countries and continents. Nevertheless, export of ship's equipment from Norway is remarkably high. Almost 90 per cent of ship's equipment from Norwegian companies ends up as exports¹¹. In 2014, Norwegian ship's equipment suppliers exported goods and services to a value of NOK 58 billion, which equates to 9 per cent of total Norwegian exports of goods and services¹². If exports of drilling equipment are added, this figure is a full 12.5 per cent.

The figure below shows that exports largely go straight from Norwegian manufacturers to customers abroad. Almost 70 per cent of the equipment is sold directly to shipyards and shipping companies in other countries. The remain-

ing 30 per cent goes via shipyards in Norway or through the shipping companies that are also active abroad¹³. The various routes exports can take are illustrated in the figure below. The data for exports are based on the responses to the questionnaire in connection with this report.

The equipment suppliers are one of Norway's most significant export industries

Whereas seafood is generally considered to be one of Norway's most important export industries, and regarded as an important pillar for Norway's future economy when the oil and gas business eventually declines, it is less publicly evident how important exports of Norwegian maritime equipment are for society. In 2014, seafood products to a value of NOK 67 billion were exported (SSB,

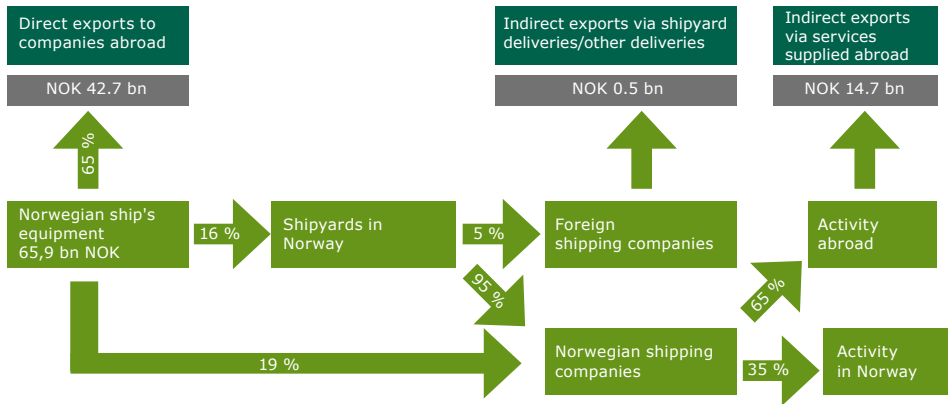


FIGURE 4-1: Exports of ship's equipment from Norway in 2014. SOURCE: MENON (2015)

¹¹ We have not included the trading companies in the export figures. This is because we want to avoid counting exports twice since the goods would first be sold from the manufacturers to the trading companies and would then be sold on.

¹² 9 per cent of all exports of goods and services excluding exports of crude oil and natural gas.

¹³ More information about data quality is found in the appendix.

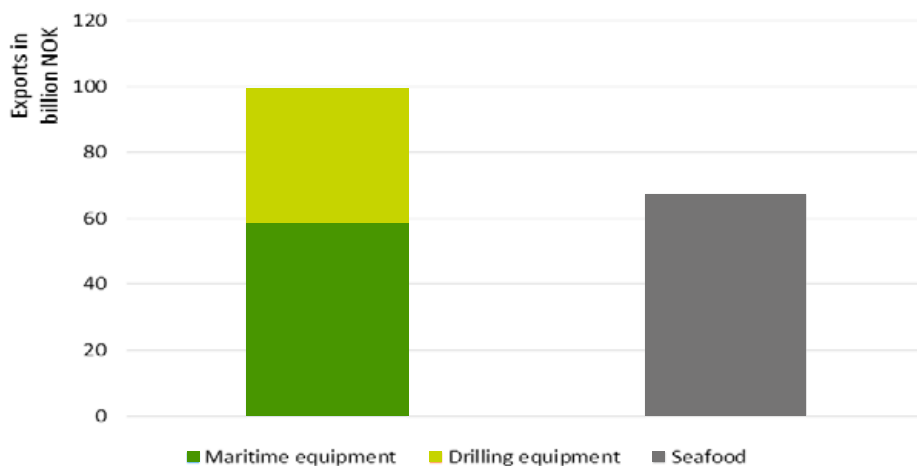
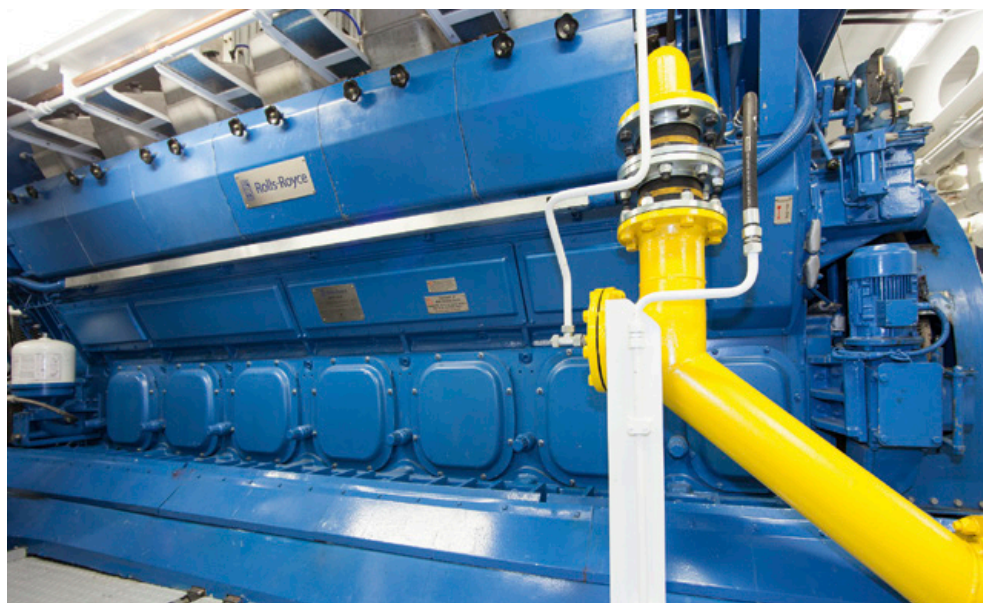


FIGURE 4-2: Export value for maritime equipment as compared to seafood exports in 2014. SOURCE: MENON/SSB.

2014). Ship's equipment alone constituted around the same amount with an export value of NOK 59 billion, equivalent to 9 per cent of Norwegian exports¹⁴. If exports of drilling equipment and

marine specialist equipment are added, exports are clearly larger than seafood exports, with a total export value of NOK 100 billion.



From the engineroom onboard the Fjord Line ferries; Four Bergen BV35:40P 12G gas engines, coupled in pairs drive Promas integrated CP propellers. Photo: ©Rolls-Royce

¹⁴ 9 per cent of all exports of goods and services, excluding exports of crude oil and natural gas.

5. The future prospects for equipment suppliers have changed dramatically

While the previous chapters have focused on the historical development, this chapter will be looking forward to evaluate how the industry will be developing over the next few years. In the questionnaire survey, which provided the basic data for this report, close to 100 companies responded as to how they expected their turnover to develop in 2015 and 2016. On this basis, we have estimated a negative expected growth in turnover from 2014 to 2015 of 3 percent. That is much lower than the annual growth rate of ten percent over the last three years. We see a sudden change in the industry that will probably last for the coming few years.

In the survey, the companies were also asked about their expectations of growth from 2015 to 2016. The responses are illustrated below. As we see, the companies are not very positive about growth opportunities for 2016. More than 40 percent anticipate a reduction in activity. Two thirds of the companies expect no growth or negative growth from 2015 to 2016, while the last third expect growth. When asked the same question two years ago, 90 percent of the companies expected growth from 2012-2013. There has in other words been a large change in the business sentiment since then.

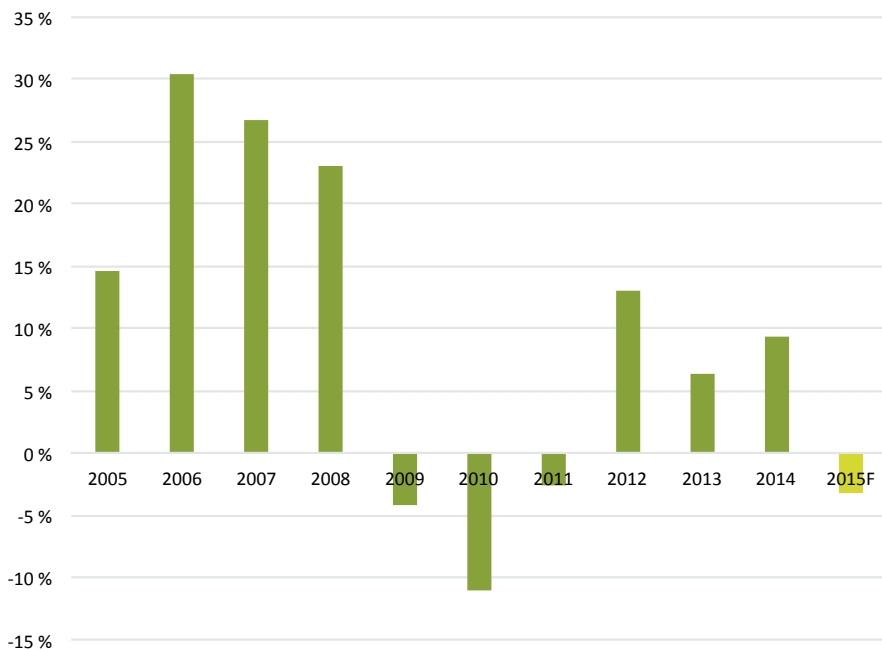


FIGURE 5-1: Annual growth in turnover for suppliers of ship's equipment, 2004-2015.

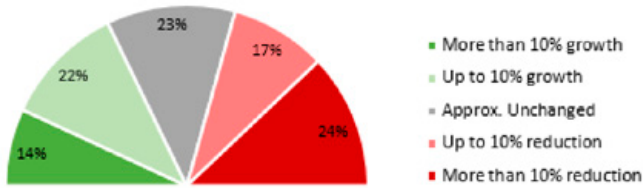


FIGURE 5-2 A: Anticipated growth in turnover from 2015-2016. SOURCE: MENON (2015)

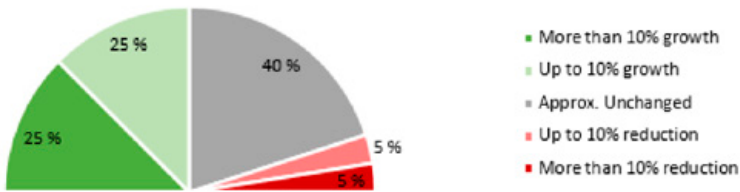


FIGURE 5-2 B: Anticipated growth in turnover from 2012-2013. SOURCE: MENON

The order books in the ship's equipment industry amounts to almost NOK 60 billion – equivalent to 90 percent of yearly turnover

Another indicator of future growth is the size of the companies' order books and the trend in the size of these order books. In the survey, the companies were asked to enter the level of their current order books. The analyses show that

their order books are equivalent to NOK 58 billion. If the trading companies are disregarded, the ship's equipment suppliers have a turnover of NOK 65 billion, and the order books will then cover almost one year's turnover. This is about 10 percent lower than the status in 2012. If the various groups are examined, the relationship between order books and turnover vary from 58 per cent for other operating equipment to more

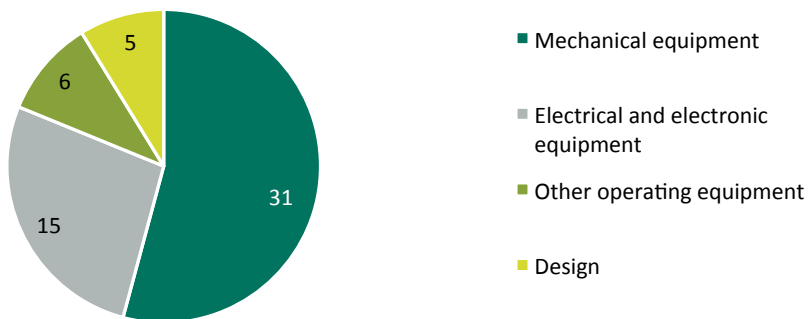


FIGURE 5-3: Norwegian ship's equipment manufacturers' order books in September 2014 (figures in NOK billion)¹⁵. SOURCE: MENON

¹⁵ Because of a low response rate from the design-companies, the numbers for this group is uncertain.

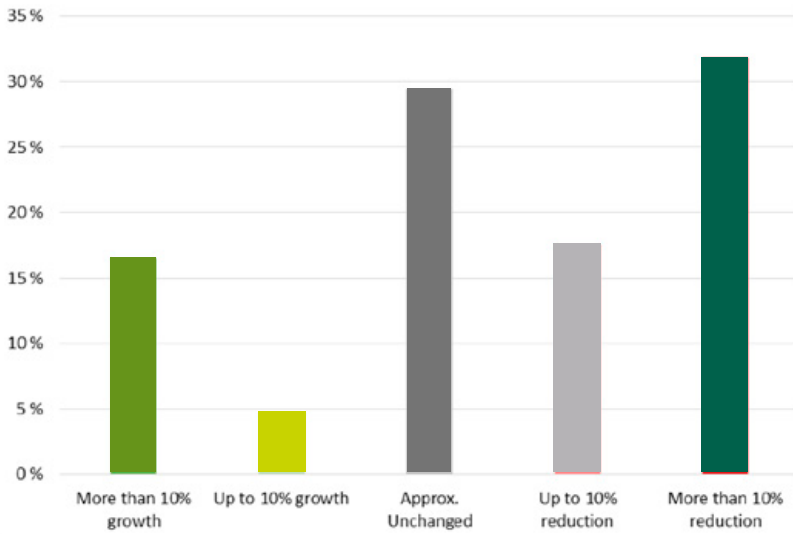


FIGURE 5-4: Change in reserve orders over the past 12 mths. SOURCE: MENON



Viking Princess has a deadweight of 6,500 tonnes, a length of 90 metres, a breadth of 21 metres and a deck area of over 1,050 square metres. The LNG dual fuel engines ensure low NOx emissions and reduced CO₂ emissions. Foto: Tom Guldbrandsen/ Kleven Maritime AS

than 100 per cent for ship's design. The players supplying mechanical equipment have by far the largest order books with NOK 30 billion, followed by electrical and electronic equipment and other operating equipment. It is also worth noting that the order books for players producing electrical and electronic equipment, viewed in relation to their turnover, are higher than the manufacturers of mechanical equipment. Again this is a sign of this group having improved its future prospects.

The order books have fallen in the past 12 months

The trend as regards changes in reserve orders over the past 12 months is also considered to be very negative. Almost half of the respondents report a reduction in their order books, of which most report strong decline. 23 per cent report little or no change, while more than 20 per cent of respondents report an increase.

6. Appendix - About the questionnaire survey and data

The survey was sent out in August and September 2015 to 538 respondents and received a total of 95 responses. To assure ourselves that the survey was representative of the selection we analysed, we focused on obtaining responses from all of the largest companies since these dominate overall activity in the industry. We were highly successful in doing this. The design group consist of less than 10 large entites, and here we have very few respondents. This means that the uncertainty is high when it comes to answers from this group.

In this survey we only wanted to include the maritime share of the companies' turnover. The reason we wanted this is that a number of companies such as ABB, Siemens and Jotun are major suppliers of the maritime industry in Norway, but are not viewed as maritime suppliers since most of their activities are aimed at other industries. The maritime share was given by the firms themselves in the questionnaire. The remaining companies were then given a maritime share based on what they themselves state on their websites or in their annual reports. If this information still was unavailable it was estimated based on the average response from the other companies. This year's report also had the advantage of resting on earlier estimates from the 2012-report.

The subdivision into the various subgroups was made on the basis of the companies' own valuation (from the questionnaire), or if this was not available, on the basis of industry codes and/or our own knowledge of the companies. Some of the largest companies have operations spanning the various categories and for the largest of these, an assessment was carried out as to whether

activities needed to be subdivided between the different subgroups. Rolls Royce is one example in this regard. The company has a wide portfolio of goods and services, and the organisation is registered under only one registration number. For other companies, this is less of a problem since they have a number of different separate firms that can be positioned within different categories. Wärtsilä is a good example of this. They have four subsidiaries that come under different categories, from mechanical equipment to ship's design.

The export data is mainly gathered in the survey, but also combined with earlier surveys Menon has completed. The percentage of deliveries from Norwegian yards to Norwegian/foreign shipping companies are estimated based on earlier reports from Menon and Møreforskning. The same is true for division of activities abroad and in Norway for the Norwegian shipping companies. The turnover might be somewhat overestimated as some of the deliveries might be subcontracts to other companies. On the other hand, no export of services related to trading activities has been including. The total effect might therefor not necessarily be that we have overestimated export activity.

The report is based on a registry of all Norwegian entities that deliver accounting information to Brønnøysund Register Centre. Changes from previous editions are related to changes in companies that are included or excluded. Changes may also occur as the maritime share differs. Menon will then update the historical numbers based on the most recent maritime share, so that the numbers are comparable also historically.

7. Appendix – Key performance indicators for the industry 2013 & 2014

EMPLOYMENT (2013-2014) IN SUBGROUPS AND MAIN GROUPS

Subgroup	2013	2014	CHANGE
Design	1 025	1 050	2 %
Other operating equipment	3 098	3 161	2 %
Trade	2 445	2 449	0 %
Electrical and electronic equipment	4 912	4 996	2 %
Mechanical equipment	9 675	9 674	0 %
Total - ship equipment	21 155	21 331	1 %

Other maritime equipment			
Drilling equipment	4 848	5 614	766
Total	26 003	26 945	4 %

TURNOVER IN BILLION NOK (2013-2014) DISTRIBUTED INTO SUBGROUPS AND MAIN GROUPS

Subgroup	2013	2014	CHANGE
Design	4.01	4.41	10 %
Other operating equipment	9.29	9.77	5 %
Trade	10.71	11.51	7 %
Electrical and electronic equipment	15.45	16.33	6 %
Mechanical equipment	31.42	35.43	13 %
Total - ship equipment	70.88	77.45	9 %

Other maritime equipment			
Drilling equipment	35.23	46.31	31 %
Total	106.10	123.76	17 %

WEALTH CREATION IN BILLION NOK (2013-2014) DISTRIBUTED INTO SUBGROUPS AND MAIN GROUPS

SUBGROUP	2013	2014	CHANGE
Design	1.24	1.23	0 %
Other operating equipment	2.96	3.10	5 %
Trade	2.29	2.45	7 %
Electrical and electronic equipment	5.53	5.96	6 %
Mechanical equipment	9.26	10.20	10 %
TOTAL - ship equipment	21.27	22.94	8 %

Other maritime equipment			
Drilling equipment	8.66	11.93	38 %
TOTAL	29.93	34.88	17 %

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