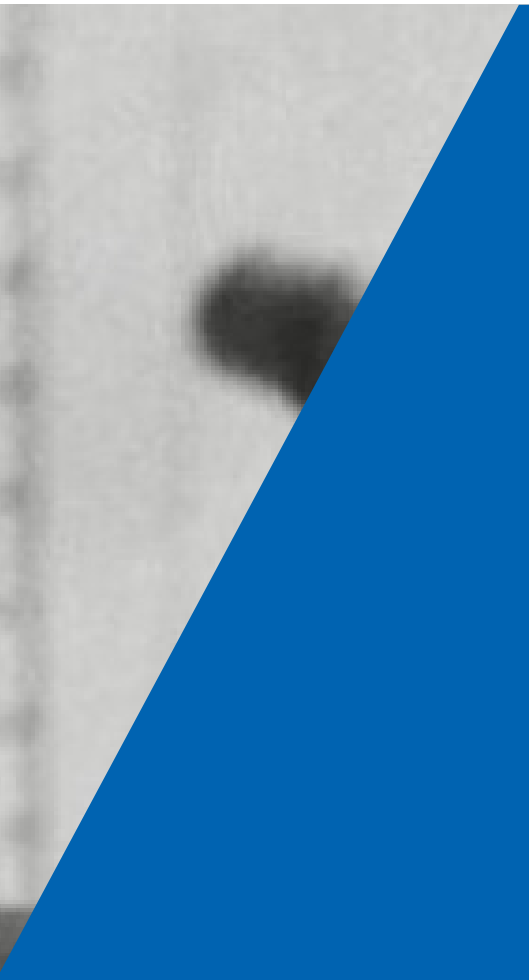
TURKISH MARITIME SECTOR ECONOMIC VALUE AND EMPLOYMENT INVENTORY

PROJECT REPORT

October 2020

İMEAK DENİZ TİCARET ODASI
TURKISH CHAMBER OF SHIPPING



We must think of maritime as the great national ideal of Turks and achieve it as soon as possible.

Mustafa Kemal Atatürk

Content

Abbreviations

EU: European Union
USA: United States of America
ALFARAX: DWT medium size oil tankers between 80,000-199,000
CAPEMAX: Very large and ultra-large cargo ships for 150,000 DWT.
CAGR: Compound Annual Growth Rate (CAGR)
CLARKSONS RESEARCH SEABORNE TRADE MONITOR: Clarksons Research's Maritime Trade Outlook Report
DWT (Deadweight tonnage): It is the highest weight a ship can carry and is the sum of the weights of raw cargo, fuel, water, provisions, passengers and seafarers themselves and their belongings.
GDP: Gross Domestic Product
GT (Grosston): The cubic capacity of the entire interior volume of the ship is the value in cubic feet of all its enclosed spaces. 1 GRT = 2,83 m3
HANDYMAX: Cargo ships smaller than 60,000
DWT HARPEX: HARPER PETERSEN Charter Rates
Index I/O: Leontief Input/Output Model Abbreviaiton
IMF: International Monetary Fund
ISTFIX: İstanbul Freight Index
TCS: Istanbul and Marmara, Aegean, Mediterranean, Black Sea Regions Chamber of Shipping
IMO: International Maritime Organization
LNG: Liquefied Natural Gas
LPG: Liquefied Natural Gas
PANAMAX: Medium-sized cargo ships that can cross the Panama Canal
SUEZMAX: The largest type of ship that can pass through the Suez Canal
SSI: Social Security Institution
TEU: Abbreviation for "Twenty-foot Equivalent Unit" in English, used as an industry standard for containerized cargo.
TURKSTAT: Turkish Statistical Institute
TÜRKLİM: Port Operators Association of Turkey
UAB: Ministry of Transport and Infrastructure


İMEAK DENİZ TİCARET ODASI - TURKISH CHAMBER OF SHIPPING -

Acknowledgment

We would like to thank the Turkish Chamber of Shipping (TCS) management, which has put this project work on its agenda. We would like to thank TCS Chairman of the Board of Directors, Mr. Tamer Kıran, who guided us with his constructive criticism, advice and experience at every stage of the work process.

We thank TCS Assembly President Mr. Salih Zeki Çakır for his guidance and support during the project process.

We would like to thank the Project Coordinator Mr. Adem Kocadağ, who was with us in every step of the Inventory Project to achieve its objectives. We would like to thank the TCS Professional Committees and Presidents who listened to us during the work process, made recommendations and will take the work to a higher level in the future. We express our satisfaction with the administrative support of the TCS General Secretariat. Our WEB-based inventory work could not have been carried out without the support of the administration.

We believe that this project will make great contributions to increase the economic value of our country's Maritime Activities. We would like to thank M.Sc Engineer Engin Koçak for his support in calculating the activities of our Commercial Fleet and in the value calculations of the Ship Freight Transport Group during the project process.

We would like to thank the business people and NGO officials who have shared their valuable experience and knowledge with us in this study and with whom we were able to negotiate, albeit limited, in our project, which coincided with the Covid-19 process.

KAYKAYOGLU
innovation group

Kaykayoglu Innovation Group
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Preface

Prof. Dr. C. Ruhi Kaykayoğlu
KiG CEO

There are sectors that drive the countries' economies. This project study has been carried out in order to determine the economic values and employment amount of the activities of Transportation by Sea, which is included in the Logistics and Transportation Sector, which directs the development of all sectors in our country, Fisheries and Aquaculture sectors within the Port and Agriculture sectors; Shipbuilding, Tourism, and Marina sectors in the manufacturing sector and other sectors such as Finance and Insurance related to all these sectors.

Initially, it was aimed to calculate the economic value and employment amounts with an inventory study prepared over the WEB from TCS members. Nonetheless, considering that the results of this inventory study would be delayed, an internationally accepted economic value model design methodology was chosen and the big picture was taken with the data obtained from reliable sources with this model.

In many countries, the "Leontief Input-Output Model" combined with the "Oxford Economics Model" used to calculate the contribution of maritime activities to the economy.

The data required for economic value and employment quantity calculations are provided from face-to-face interviews, academic publications, UAB and DGM reports, TURKSTAT and SSI databases, Vision reports of the Ministry of Agriculture and Forestry and NGOs, TCS annual reports and Clarkson Research sources.

The results are exciting and will shed light on the sector. Let's read this report carefully, take our notes and develop new ideas that increase the level of accuracy in calculating the economic and employment values of the sector.

We wish the best to our country and success to the maritime industry companies.

Tamer Kıran
TCS
Chairman

As Turkish Chamber of Shipping, which is the umbrella organization of the maritime sector in Turkey, we are determined and striving to move our sector to the top position it deserves in parallel with the development of the country with the vision of “Maritime nation, Maritime country”.

In this context, we have concluded the work that we started in 2019 and continued for more than 1 year with the decision of our Board of Directors in order to make an inventory of our maritime sector, to create a healthy infrastructure of legislation, regulations and support that will be expected from the public. sector with all its components were brought together by evaluating them with internationally accepted scientific methods.

In the study conducted with the Innovation Group of Prof. Dr. C. Ruhi Kaykayoğlu, under the chairmanship of Mr. Adem Kocadağ, Chairman of the Maritime Sector Inventory Commission of Turkish Chamber of Shipping, all the data collected from the leading companies and non- governmental organizations of the sector and the institutions of our state related to our sector, and from our approximately 10 thousand members and 48 Professional Committees representing the Turkish maritime sector with all its components were brought together by evaluating them with internationally accepted scientific methods.

Thus, the “Turkish Maritime Sector Economic Value and Employment Inventory Project Report was prepared, which reveals the impact of the Turkish maritime sector on the economy of our country, its value and the employment situation it creates. This study, prepared with 2019 data, will be constantly updated in the coming periods and will be the starting point of a sustainable project.

I am happy to say that the Maritime Inventory Study, which is the most comprehensive economic assessment of maritime activities in Turkey to date, has shown that the contribution of our sector to the country’s economy with all its components is much greater than is known.

I would like to thank those who have prepared this work, which we have always needed, and those who contributed and supported it. I hope that this work, which will be presented to the institutions of our state and the public of our country, will open new horizons for our sector and support Turkish shipping to become one of the strategic and priority sectors of our country.

Salih Zeki Çakır
TCS
President of The Assembly

It is obvious that the maritime sector inventory study, which was initiated in accordance the vision of “Maritime Nation, Maritime Country” and reached an important point as a result of intensive efforts, will be one of the most significant parts of the Blue Motherland/Blue Economy Strategy that shapes our maritime policy.

The concept of Blue Motherland, which draws Turkey’s borders in the Black Sea, Mediterranean, Marmara and Aegean, will become even more meaningful with the determination of the size of our maritime economy. This study, which has emerged by covering all sub-sectors of our Maritime Sector, will enlighten us about the place of our Blue Economy in Turkey and the world economy and shed light on the future of our Blue Motherland/ Blue Growth strategy. Furthermore, providing the sector stakeholders with data such as the number of people employed in our sector, the number of exports, annual foreign currency inflow, the place of our maritime sector in the world, its advantages/disadvantages that may constitute an element of competition and company sizes in an up-to-date manner will lead to increasing our level of global competition.

I would like to express my gratitude to the Board of Directors of Turkish Chamber of Shipping, which is the main factor in the realization of the Maritime Sector Inventory Study, presenting the sector data with all these features up-to-date to Turkish seafarers, to the Chairman of the Maritime Inventory Commission, Adem Kocadağ, and to Prof. Dr. Ruhi Kaykayoğlu, the scientist who has shown great effort in the emergence of the study in every aspect, and his team, and to the valuable stakeholders of our sector for their support in this process.

I hope that this work, which will determine the future route of our sector and almost ‘re-equip Turkish Seafarers with real sector data, will be beneficial on behalf of our country and our maritime business.

Adem Kocadağ
TCS
Head of Inventory Commission

Precious components of our Blue Motherland and Blue Economy, my dear friends, dear elders,

As the Chairman of the Maritime Sector Inventory Commission of Turkish Chamber of Shipping, together with Prof. Dr. C. Ruhi KAYKAYOĞLU and his team, the founder of Kaykayoğlu Innovation Group, after more than a year, we have successfully finalized our project, which determines the economic value of the Turkish Maritime Sector with all its components, including all 48 committees, its total impact on our country's economy, and the employment situation it created, in a way that opens new horizons and new perspectives to our industry.

The result data in our project were obtained by calculating the economic contribution separately in 3 main groups as direct, indirect, and induced effects.

Our project has been supported by a web-based inventory study submitted for the data entry of approximately 10,000 TCS members, participation and opinion taking in all professional committee meetings, as well as visits by companies and NGOs in the sector. Data entry of our members still continues and will continue... With the decision of the TCS management(s) and the request of the members, data entry can be made every year, so that a "living" and "continuous" inventory study can be carried out on the web on a yearly basis.

With the effect of the developing conditions and pandemic process after the beginning of our project, the calculation of economic and employment values have been made not only with data collection studies but also with statistical databases, public resources, literature data, visits and many different sources and striking results have been obtained.

Thanks to our project, a future-oriented "sustainable" model proposal has been developed by calculating the Economic and Sectoral Employment Values of our Blue Economy with selected models and theories.

We believe that the presentation of our project to the decision-makers of our State will support Turkish Maritime to be among the Strategic and Priority Sectors of our country.

Furthermore, in the conclusion part of our project, 10 critical suggestions have been presented to TCS management to plan the future from today. Recommendations on 10 critical issues such as Tax Legislation of the Maritime Sector, creation of sectoral Big Data, Sector-University Cooperation, Innovation Center, R&D and Technology Center are listed.

I am extremely honored to be the President of the Commission in this important project, which has not been done for years, to carry out our project with the most scientific methods, faith and determination, and ultimately to present to you, our valuable components.

As a result, I would like to thank the founder of Kaykayoğlu Innovation Group, Prof. Dr. C. Ruhi KAYKAYOĞLU and his team, with whom we have carried out our project together, to the TCS Board of Directors and Assembly Management, who assigned us by trusting us for the implementation of the project, to TCS, IT and Sectoral Research Department employees, and to all maritime companies and NGO executives for their contribution.

I sincerely wish that our project, which I continue with great pleasure and finally presented to your valuable information, will be beneficial to our entire Maritime Sector and be used as a driving force to sail to new horizons.

With the deepest love and respect.

Why Was Such A Study Needed?

Chapter 1

As it is known, Global Maritime Sector; despite the fact that it is a strategic sector that provides its share of nearly 90% in the field of transportation and obtaining more than 50% of the national income generated in the world from the goods and services transported by sea, the Maritime Sector in our country has not yet been among the strategic and priority sectors. Our country, which is surrounded by seas on three sides and has 3.8% of the world's coastline, should start its competitive journey with its maritime-related sectors by correctly determining its situation in our region and globally.

The fact that inventory and impact studies for determining the economic value related to the Turkish Maritime Sector have not been discussed much until today has engaged the attention of the Executive Board and Council of TCS and the request was designed and the Chamber of Shipping decided to carry out such a study with a professional approach. It has been found appropriate to work with a consultancy firm to determine the situation of the Maritime Sector Economic and Employment values.

After the relevant project proposals are collected, Kaykayoglu Innovation Group, located in Bahçeşehir, Istanbul, Turkey which is of academic origin and harmonized with the experiences of its founder, has been asked to carry out a project study that will determine the impact, value and employment status of the Turkish Maritime Sector on our country's economy. It has been aimed to develop the prepared project with a web-based inventory study and visits to be presented to the members of TCS Professional Committees. Inventory study according to the need in the project flow was supported by strong literature scanning and data drilling.

Economic values and employment values have been calculated by using the most up-to-date and reliable data from various national and international calculations and maritime sources and the information of the TCS Professional Committee. Some of the significant questions we answered through this project are listed on the right page:

1. How many ships do we have with domestic and foreign flags belonging to Turkish shipowners, how many times have we set sail for, how much did we earn? What is our true potential?

2. What is the gain of the port industry in return for the amounts of cargo handled, loaded and evacuated in our ports, numbering close to 200? What is our position in Europe? What are the contributions of our regional port cities to the economy?

3. How many ships/yachts have our ship and yacht building sector built and how much revenue has it generated? How much of the revenue belongs to the sub-industry? What is the competitive position?

4. What is the economic value of our marinas, which rank 4th in the Mediterranean Basin?

5. What is the added value we offer to the sector from coastal facilities?

6. The number of our fishing vessels has approached twenty thousand. What is their added value to our economy?

7. What is the level of turnover of service companies in the Maritime Sector?

8. What are the group economic and employment values of all TCS Professional Committee members?

9. With what precision can the economic value be calculated with the data of public institutions such as TURKSTAT and SSI?

10. What kind of results has the International Oxford Economics Input/Output Model defined in Turkey to be compared on an international scale?

11. How compatible are public data and Economic Value data?

12. As a model that may be repeated every year, may the Economic and Employment value of the Turkish Maritime Sector be calculated every 12 months?

Chapter 1

For a comprehensive study outlined in the lines on the back page, it has become evident that a strategic model will be needed to find the economic value of the Turkish Maritime Sector and employment in the relevant sectors in the most accurate way. Therefore, a search has been made for a model in which not only the declaration of TCS Professional Committee members via inventory, but also country accounts and data will be used.

As a result of the preparatory work carried out, the "Oxford Economics Input-Output Model", which is widely accepted in the world, has been found suitable to meet the project needs.

On the other hand, as a result of the strategic introduction of the concept of "Blue Motherland" on the agenda of the country, evaluations about National Defense have come to the fore in the military field, the Maritime Sector has engaged the attention of military strategists and has affected the focus of decision-makers. Thus, it has been suggested that this study should be associated with the concepts of Blue Economy and Blue Employment.

With this study, TCS Professional Committee members representing the Maritime Sectors gathered into five (5) significant groups in accordance with international standards, and the economic and employment values of the Turkish Maritime Sector groups have been calculated with the concepts of Direct Impact, Indirect Impact, and Induced Impact created by the sectors represented by the committees in each group.

Thanks to the study conducted, it will be possible to introduce the economic values of the groups formed by the TCS Professional Committees and the Blue Economy, both to the relevant parties in our country and to the international stakeholders. Thanks to this project related to the Economic and Employment Value Model work, the future of Turkey's Blue Economy will be shed light.

In this context;
- Turnover Sizes (gross earnings)
- Employment Capacities
- The indirect and evoked values they cause, and
- As a result of these determinations, the strategic suggestions to be made for the growth of the Maritime Sector of the Maritime Sector industries will be determined.

It is recommended that the results be presented to the relevant stakeholders by the TCS management. Tables, Figures, and graphs obtained from numerous sources along with the study reports and selected from sources showing the change in the maritime sector of our country in recent years are included in the Annexes of this report.


BENETEAU

As of 2019, the Turkish economy generates $ 2.06 billion in domestic revenue per day. According to GIB data, the revenue generated by the maritime sector in one day is $ 50 million.

Turkish Economy and the Maritime Sector

Chapter 2

Turkey has been among the G20 countries for 20 years with its developing economy. Figure 2.1 summarizes the economic performance of our country for the last 20 years, according to the World Bank data. We have an economy that has grown approximately three times in the last 20 years. We believe that we will gain our position loss in recent years by climbing up again until 2023.

A remarkable situation shown by the World Bank table is that all of the countries in the top 20, except Switzerland, have seafronts. The maritime economy is a great power. China, Japan and South Korea are the leading countries in shipbuilding in the maritime sector. France and Spain are the countries that have a say in the marina operation in the world. Countries such as Germany and the UK are also the leading G20 countries in both ports and Maritime Law and Finance.

Leadership positions in World Ports and offshore energy resources are also found in the countries on this list.

We believe that with natural gas resources discovered in the Black Sea and possible energy resources in the Eastern Mediterranean, Turkey

2000			2017			2018			2019		
No	Country	Billion $	No	Country	Billion $	No	Country	Billion $	No	Country	Billion $
1	USA	10,252	1	USA	19,391	1	USA	20,494	1	USA	21,428
2	Japan	4,888	2	China	12,238	2	China	13,407	2	China	14,343
3	Germany	1,955	3	Japan	4,872	3	Japan	4,972	3	Japan	5,082
4	Britain	1,651	4	Germany	3,677	4	Germany	4,000	4	Germany	3,845
5	France	1,366	5	Britain	2,622	5	Britain	2,829	5	India	2,875
6	China	1,215	6	India	2,601	6	France	2,775	6	Britain	2,827
7	Italy	1,145	7	France	2,583	7	India	2,717	7	France	2,715
8	Canada	745	8	Brazil	2,056	8	Italy	2,072	8	Italy	2,001
9	Mexican	708	9	Italy	1,935	9	Brazil	1,868	9	Brazil	1,840
10	Brazil	655	10	Canada	1,653	10	Canada	1,711	10	Canada	1,736
11	Spain	597	11	Russia	1,578	11	Russia	1,631	11	Russia	1,700
12	South Korea	561	12	South Korea	1,531	12	South Korea	1,619	12	South Korea	1,642
13	India	477	13	Australia	1,323	13	Spain	1,426	13	Spain	1,394
14	Netherlands	418	14	Spain	1,311	14	Australia	1,418	14	Australia	1,393
15	Australia	399	15	Mexican	1,150	15	Mexican	1,223	15	Mexican	1,258
16	Russia	278	16	Indonesia	1,016	16	Indonesia	1,022	16	Indonesia	1,119
17	Turkey	273	17	Turkey	851	17	Netherlands	913	17	Netherlands	909
18	Switzerland	272	18	Netherlands	826	18	Serbia	782	18	Serbia	793
19	S. Arabia	190	19	S. Arabia	687	19	Turkey	771	19	Turkey	754
20	Indonesia	180	20	Switzerland	679	20	Switzerland	704	20	Switzerland	703

Figure 2.1 Financial Performance Of G20 Countries Between 2002 And 2019

will strengthen its Blue Economy and climb up the G20 ranks.

As of the end of 2019, our country's GDP, which is the 19th among the G20 countries, is $ 754 billion. The added value provided to GDP is 2.38% according to the value of $ 18.4 billion, which is the economic value size of the Maritime Sector, declared by the Revenue Administration (GIB) in 2018. If we compare this rate with other countries; It is 4% in the USA, 10% in China, and 2% in the European Union. On the other hand, the place of Logistics and Transportation Sector in GDP is 8.2%. In this case, the share of the Maritime Sector in the Logistics and Transportation Sector can be calculated as 34%.

Economic Values of the Turkish Maritime Sector, calculated with this study, were determined to be above the GPA data predictions.

Since it is not possible to access the GİB data by the researchers who prepared the report, a calculation systematic in accordance with the selected Economic Value Model has been announced by the Revenue Administration is based on calculations made on publicly available data. In this study, economic values are based on data and calculations provided by national and international sources. A comparison with the GİB data is presented in Chapter 9 of this Report. The number of companies in the Turkish Maritime Sector is also increasing rapidly. While there are 9,435 companies registered in the sector in TCS, according to DTGM and UAB data, the number of companies increased approximately 3 times between 2002-2018. While the number of active enterprises in the Maritime Sector was 5,673 in 2005, this number increased to 15,323 in 2018. This corresponds to a 270% growth. The value of the Blue Economy has been understood in our country and the excitement of protecting the Blue Motherland has increased. On the other hand, it is observed that the member companies of TCS make up 61% of the total number of active enterprises.

Chapter 2

When the transportation sector investment expenditures are examined with the current prices of 2019, it is seen that approximately 90% of the infrastructure investments since 2015 have been made to the Motorways and Railways, while the share of the Seaways from the expenditures is on average in the last five years has remained at 1%. Investments in 2019 are 72.85% Motorways, 23.41% Railways, 3.35% Airlines and 0.38% Seaways. Again, according to the data obtained from the same source, the sectoral shares of expenditures between 2003 and 2019 are shown in Figure 2.2. In order to draw attention to the investments made for the Seaways and to increase the amount, the economic value of the Maritime Sector should be well explained to the relevant stakeholders.

According to 2019 TURKSTAT data, distribution in Turkey's Foreign Trade Transportation by modes on a quantity basis; Sea Transportaiton is 88.8%, Rail Transportation is 0.47%, Road Transportation is 9.74%, Air Transportation is 0.39% and Pipelines are 0.6%. The share of the Sea Transport in Export and Import s at the level of 88%.

The importance of the Maritime Sector in transportation in our country is indisputable. The timing of this inventory study, which will reveal the economic and employment values of the sector that provides significant added value to GDP, has been appropriate.Besides, this project study, in which the Maritime Transport Performance from 2003 to date will be evaluated, will provide important strategic areas to TCS member companies and institutions of our country in the next 10 years.

We believe that the Turkish Maritime Sector Strategy Book, which was recently published due to the 30th anniversary of the Maritime Faculty of Dokuz Eylül University, will also support this study and support our maritime companies to increase their technological and innovative capabilities in governance. We congratulate and thank our academics who have added value to the book.

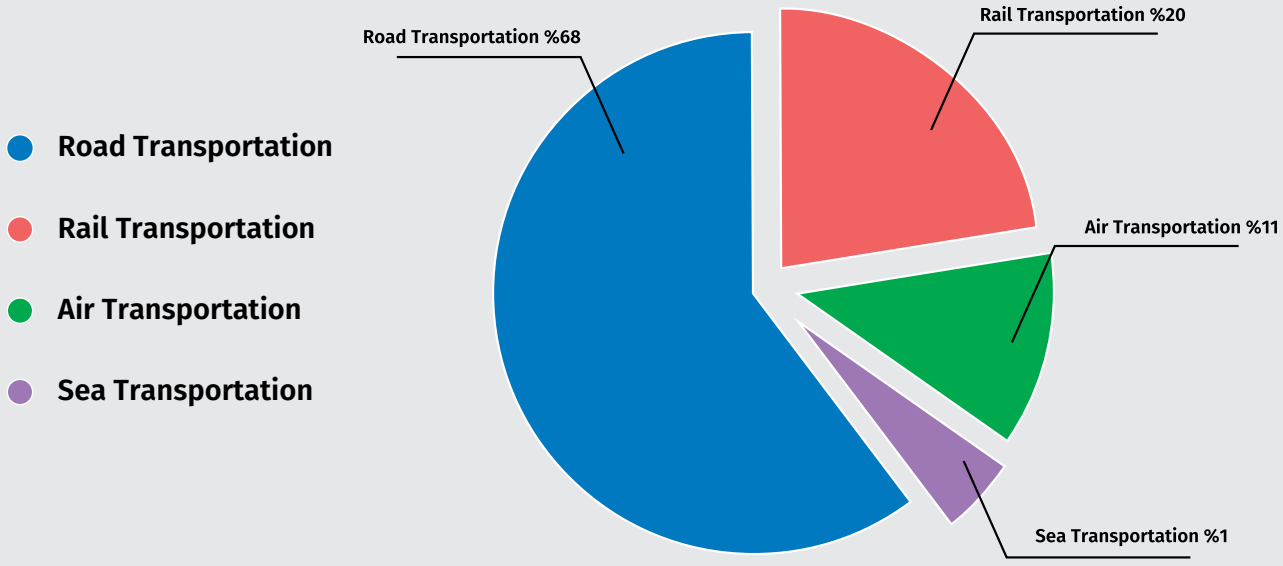


Figure 2.2 Turkish Transportation Industry Capital Expenditure Shares (2003-2019)

The total volume of Turkey's foreign trade by sea between 2000 and 2020 is 3.216 Trillion Dollars according to TURKSTAT data. In the last 20 years, financial size has increased from $27.6 Billion to $114.8 Billion by the end of 2020. This corresponds to a 417% increase.

Turkish Maritime Industry Group Definitions

Chapter 3

The group definitions of the Turkish Maritime Sector and its constituent industries have been prepared in accordance with the list of activities under the auspices of the Maritime Sector in the Oxford Research model, which forms the basis of the Maritime UK study. This list of activities corresponds to a grouping that is accepted in many countries other than the UK. Thus, in order to compare the results to be obtained as a result of this study, values on an international scale will have been presented. Fishing and fish breeding and breeding farm activities not included in the classification have been added to this study as a separate 5th class group.

For Maritime Sector activities, Standard Industrial Classification (SIC) codes are also available, which allow the identification and measurement of direct economic impacts and values using publicly available data sources, corresponding to the classes.

In addition to these codes, we focused on NACE codes in our study. Thus, the opportunity to evaluate the activities of the Maritime Sector of our country within the framework of both SIC and NACE codes has been created.
The Maritime Sector grouping in Turkey was created according to the class activities in accordance with the Oxford Economics Model. TCS members are also grouped according to this classification.

The report laid out how the direct economic contribution of classified maritime industries and their activities were matched according to the national accounts framework. Considering that the activities of all TCS committee members may be in activities that do not fully comply with this framework, care has been taken to make the best grouping.

In order to fully capture the widest range of activities taking place in the maritime sector, we would like to emphasize that further work may be required within the framework of national accounts and data. For this reason, in Turkey, the current definition of maritime sub-sectors should be improved and the NACE codes of TCS members should be revised in order to measure the real
value of maritime economic activities more effectively.

In accordance with the Oxford Economics model, TCS members are distributed in the following groups. All studies conducted in other countries have the same groups.

Our groups and Related Industries:
A. Shipping Industry
B. Port Industry
C. Marine Industry
D. Maritime Business ServicesIndustry
E. Fishery and Fish Breeding and Aquacultural Activities

The activities in the groups are described in the right column.

A- Shipping Industry
• International Passenger Transport
• Passenger Transport in Inland Waters
• International Sea (Short Distance and/or Overseas) Cargo (Bulk Dry Cargo, Bulk Liquid Cargo, Container, General Cargo, Ro-Ro) Transportation
• Cargo Transportation in Inland Waters

B- Port Industry
• Loading-Unloading Activities
• Warehouses and Storage Activities
• Port Activities and Management
• Cargo and Passenger Transactions
• Customs and Revenues, Border Operations and Public Operations

C- Marine Industry
• Recreation, Entertainment, and Water Sports Marine Industry
• Yacht Building
• Marinas and Marina Management
• Surface and Diving Tourism
• Ship Suppliers
• Naval Engineering
• Ship Building
• Ship/Yacht Building Sub-Industry Activities
• Renewable Energy and Fuel Activities
• Naval Sciences, R&D and Academic Activities

D-Maritime Business Services Industry
• Brokers and Freight Brokers
• Agencies
• Maritime Insurance and Legal Services
• Ship Certification and Classification Services
• Education (High Schools, Vocational High Schools, Universities and Academies)
• Consultancy
• Finance/Accounting

E- Fishery and Fish Breeding and Aquacultural Activities*
• Fishing
• Aquaculture
* This industry branch is not included in the Oxford Economics and UK Maritime Model.

Chapter 3

Below is brief content about these groups.

A-Shipping Industry
The analysis of the cargoes carried by the Turkish Maritime Trade Fleet ships and the economic and employment value of the trade created here are focused. After the preparation of the list of all ships belonging to Turkish Shipowners, the information about all their expeditions in 2019 was obtained from comprehensive databases and total revenues were calculated within sensitive assumptions and constraints. In addition, the employment figures that provide the economic activities of this sector have been revealed with TURKSTAT, SSI data. The data have been verified with the predictions of industry experts and non-governmental organizations. Employment data associated with each NACE code was collected for the shipping industry, and after making interpolation for some incomplete information, a breakdown estimate that had been neglected in the sector for many years was made. A prediction has also been made for Turkish officers and crew members working on international ships.

B- Port Industry
As a first step in separating the economic activity of the port industry, Turkey's coastal facilities and especially the loading and unloading data of its ports are focused on. Statistics on the transport loads of regional ports were extracted using DTGM and UKB data, and then the earnings of Port businesses were extracted by drilling at market prices. These endorsements are cross-compared with TCS company data in particular. In addition, the economic value of the Turkish port industry was calculated by adding the added values of towage, guidance and other subsidiary port activities.

In this process, TURKSTAT and SSI data, as well as Non-Governmental Organizations Data, were used. Within the scope of the port industry, employment values were calculated with TURKSTAT and SSI data.

C-Marine Industry
In addition to the ship and yacht building sectors that form the basis of the Marine Industry, economic activities related to ship dismantling, marinas and sub-industry activities have been matched with the data of Istanbul Exporters Union, TIM, TURKSTAT, TCS, and Relevant Ministries of the Republic of Turkey. Values of some committees have also been determined by interpolation using previously declared economic value data. The values have been compared with the relevant non-governmental organizations' statements.

Employment values for the Marine Industry, as well as employment values for Shipping Industry and other industries, are derived from NACE-based TURKSTAT and SSI data. Similar calculations have been made for all Committees and companies in this group.

D-Maritime Business Services Industry
Among the Marine enterprises, the leading actors who provide services to the sector include agents, insurers and freight brokers. On the other hand, the existence and added values of universities, high schools, Maritime high schools and consulting firms that create human resources for these sectors are very important. Similarly, the economic and employment values of this group were calculated using NACE and SSI figures.

E-Fishery and Fish Breeding and Aquacultural Activities
386 fishing ports and more than 18,000 fishing vessels are located on the shores of our country. This means that we are faced with a fishing port every 22 kilometers along the coast and at least 2 fishing boats every kilometer.

Fishing is an important economic value for us. On the other hand, production on water farms has even exceeded the total value of our marine fisheries. The economic and employment values of this group in our country were calculated with the correct data obtained from the data of the Turkish Ministry of Agriculture and Forestry as well as the data of TURKSTAT and SSI.

Data and Information Groups Used in Calculation of Economic and Employment Values of the Turkish Maritime Sector

Chapter 4

"Seas constitute 71% of the Earth's surface of approximately 510 million square kilometers. Our country, with its geography surrounded by seas on three sides and a coastal length of 8,483 km, has 2.38% of the entire world's coasts and is the 30th in the ranking of countries."

With this report, the economic value created by the maritime sector of our country and the potential of the amount of employment are revealed. This economic value is defined as Blue Economic Value. Turkey, which occupies an important military, political and geopolitical position in an area at the intersection of Asia, Europe, the Middle East and the Caucasus, is at the crossing point of the $600 billion trade movement between East and West. Turkey has significant potential in this regard.

For this reason, critical strategies need to be put into operation to increase our country's competition in the Blue Economy field, our country, which is ready to turn into a center of attraction in many areas on a global scale with the resources of the existing maritime sectors. The discovery of these strategic areas will only be by determining the current situation. Numerous national and international academic theses and reports have been used to determine the situation in this project. In addition to the relevant public institutions, data from non- governmental organizations of the sector was used, data from 2018-2019 obtained from media reports and face-to-face interviews with relevant experts were used. Figure 4.1 shows the source structure used in this study.

Blue Motherland and Blue Economy will provide great added value to our country's competitive power.

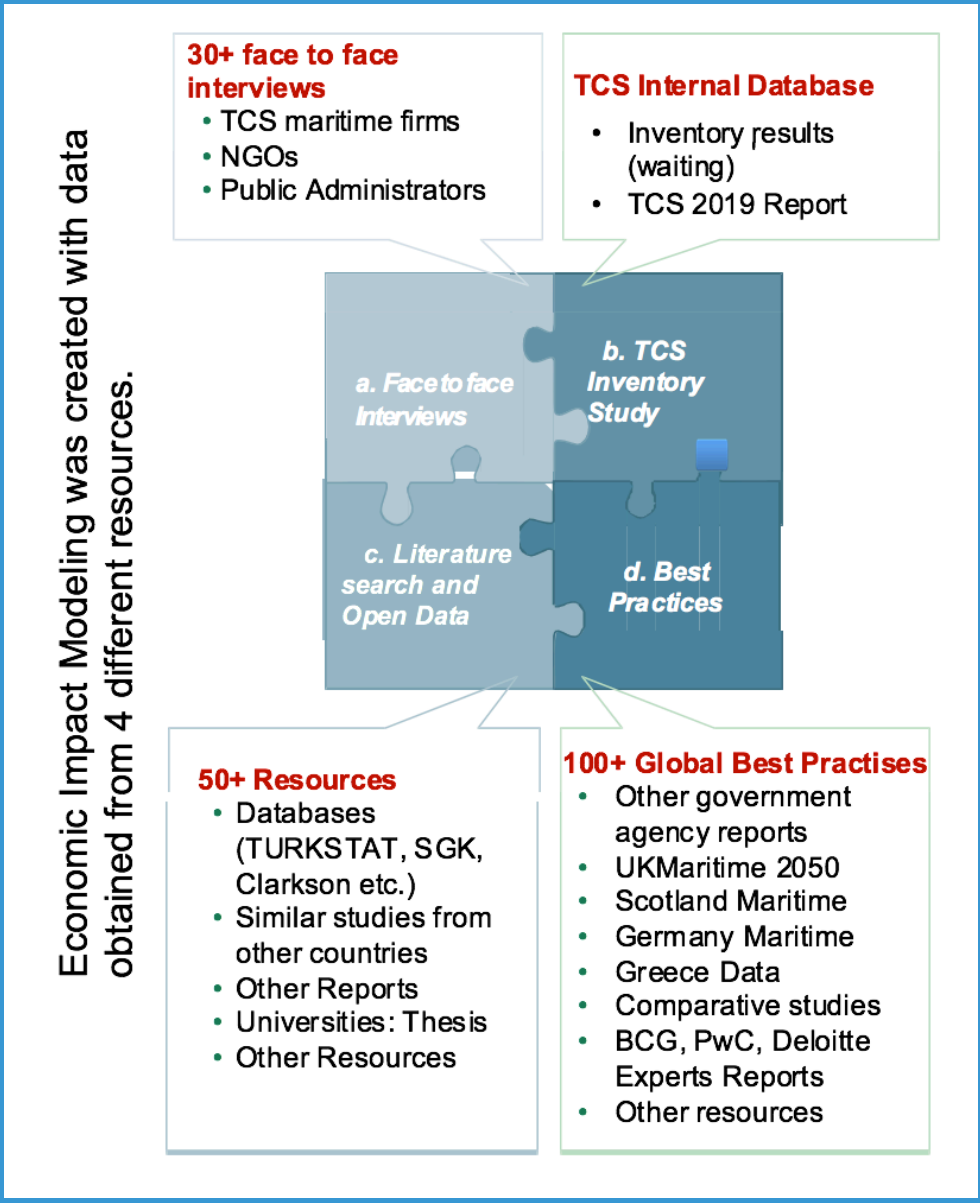


Figure 4.1 Inventory Project Resources

Important data obtained from the above sources and used in the project, providing input to the model of economic and employment calculations, are presented below. The data was prepared in relation to groups in accordance with the Oxford Economics model mentioned earlier. In particular, the study conducted by Arzu Fidan who was in the Business Program at Bilgi University and presented in her a master's thesis shares important data belonging to the maritime sectors and thus it is referenced to this report. Other data are obtained from other resources.

Chapter 4 - Important Statistical Data

A- Logistics and Transportation

• 83% of the cargo carried in the world by quantity and 70% by value are transported by sea.

• $ 10 trillion of the world trade value of approximately $ 17 trillion is transported by sea.
• According to the monetary value of Turkey's foreign trade cargo transportation in 2019, Sea Transportation has a share of 60.4% in exports and 54.2% in imports.

• According to TURKSTAT data, the share of the seaway in total foreign trade in our country increased by 379% from 2003 to 2019. It increased from $57 billion in 2003 to $216 billion in 2019.

• According to 2019 TURKSTAT data, Turkey's Foreign Trade Transportation is 88.8% by sea, 0.47% by rail, 9.74% by land, 0.39% by air and 0.60% by Pipe on the amount basis.

• According to 2018 TURKSTAT data, the place of the Transport and Transportation Sector in Turkey's GDP is 8.2%

• According to the "Seaborne Trade Monitor" published in 2020, World Maritime Transport in 2018 was 11.81 billion tons on all routes.

• According to 2019 data, the number of ships of the World Trade Fleet of 1000 GT and above is 43,739.

• As of January 1, 2020, in the rankings of countries for The World Maritime Trade Fleet, TURKEY is ranked 15th, coming after Canada. Greece is ranked the first, China the second and Japan is ranked the third.

• The foreign-flagged vessel capacity of the Turkish Fleet is around 76% in DWT. While the rate of the foreign flags of the first five countries is 82.6%, the average of 30 countries is 75.9%.

• In the World Maritime Trade Fleet, the top 5 countries in the tonnage list of 30 countries with large fleets of 1000 GT and above are Greece, China, Japan, Germany and South Korea. These 5 countries make up 51% of the world's transportation tonnage. Turkey ranks 15th in the rankings and the share is 1.6%.

• According to Clarksons Research data, 11.94 billion tons of transportation was carried out by the sea in the world in 2019. This indicates that 83% of the world commodity trade is carried out through the Seaway.

• As of 2019, the size of the World Trade Fleet is 1.87 billion DWT, and the Turkish Maritime Trade Fleet is 32.7 million DWT.

• Turkish Maritime Trade fleet domestic flag capacity is 6.83 million DWT.

• Among the ships forming the Turkish Trade Fleet in 2018, the rate of foreign-flagged ships increased from 75% to 76% in 2019.

• Ships over 1000 GT, transporting in the World Maritime Trade, transported 1.87 billion tons of cargo in 2018.

• The Turkish Trade Fleet has 1,484 ships of 1000 GT and above. With this quantity, it accounts for 3.4% of the World Trade Fleet.

• The average age of the World Trade fleet is 14.8, while the average age of the Turkish Trade fleet is 21.6.

• Greece and Japan today hold 30% of the global ship fleet. The share of the Turkish Fleet (total: 1805 ships) is only 1.7%.

• Sea transportation in Turkey accounts for 88.8% of foreign trade transportation on a quantity basis and 56.8% on a value basis.

• 32.2% of the world trade volume of 11.94 billion tons is liquid bulk cargo (crude oil, gas and chemical), 52% solid bulk cargo (iron ore, coal, grain and other dry cargo), 15.8% corresponds to transportation by container.

• Turkey's share of world container transport is 1.4%.

• Turkey's maritime transport capacity: foreign trade (import and export) volume, which was 149 million tons in 2003, has reached 353 million tons in 2019.

• World Maritime Trade fleet has reached 24.3 million TEU container transportation capacity in 2019, while Turkey has reached a total container capacity of 329 thousand TEU.

• Transit transportation from Turkish ports increased from 11 million tons in 2003 to 75 million tons in 2019.

• Cabotage transportation has reached from 29 million tons in 2003 to 56 million tons in 2019.

• Export, import, transit and cabotage transportation has increased from 190 million tons in 2003 to 484.2 million tons in 2019.

• The monetary value of the seaways in the total foreign trade of our country was $ 57 billion in 2003 and has reached $219 billion in 2019. This corresponds to a 284% increase.

• From 2004 to the end of January 2020, 5.34 million tons of fuel oil without excise duty were delivered to the maritime sector, which means a loss of excise duty of 7.78 billion₺.

• The number of transport passengers on the cabotage line has increased by 33% from 12.8 million passengers in 2004 to 150.3 million passengers today.

• The number of vehicles carried on the cabotage line has increased from 6.9 million units in 2004 to 13.4 million vehicles in 2020.

* The amount of cargo handled on the cabotage line also increased by 92% from 29.2 million tons in 2003 to 56.1 million tons in 2019.

• Turkey's maritime transport increased by 171% in the 31 - year period between 1988 and 2019.

Chapter 4 - Important Statistical Data

Turkey's Maritime Transport has grown at a CAGR (compound annual growth rate) of 3.4%.
• According to Trend analyses conducted as of 2023, the amount of cargo handled at our country's ports is projected to reach 500.4 million tons.

• Distribution of the world Merchant Marine fleet by ship type: 42.6% dry cargo ships, 28.7% oil tankers, 13.4% container, 11.5% other type, 3.7% general cargo.

• The comparison of the Marine Trade Fleet between Turkey and close competing countries is shown in the table below

Country Name	World Ranking	Amount of Ships	Capacity (1000 DWT)	Share In The World (%)
TURKEY	15	1,804	32,659	1.7
Greece	1	4,850	380,281	20.3
Italy	10	1,100	48,043	2.6
Other Countries		43,739	1,872,812	

• In the studies on seafarers entering and leaving the main international ports in the world, established by the international seafarer research center of Cardiff University in England, the number of Turkish seafarers on the ships that have sailed to these ports was determined as 23,810 (SIRC Cardiff University, 2003, p.6.).

• The types of ships that have a seafaring problem are given in the right column.

Sector / Ship Type	Proportion of Companies that are Experiencing Problems In Seafaring Employment
LPG Tankers	%50
LNG Tankers	%36
Chemical Tankers	%33
Bulk Vessels	%23
Offshore Ships	%20

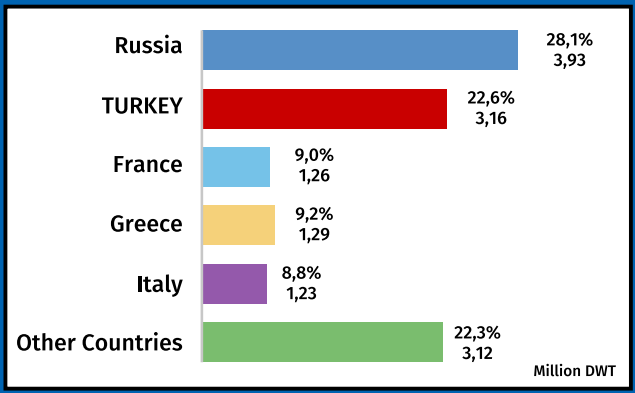
Types of ships that have problems with employing seafarers (BIMCO / ISF Manpower, 2015, p.27)

	2015	2020	2025
Seafarer Supply	774,000	789,500	805,000
Seafarer Request	790,500	881,500	952,500
Lack Of Supply/ Excess Supply	-16,500	-92,000	-147,500
As %		-11.7%	-18.3%

• The situation in the supply and demand of the estimated officer clss seafarer is presented in the table above

• The Turkish Fleet, which had 569 ships of 1000 GT and above in 2003, has reached 1484 ships as of January 2019. The increase is 116% (ISL).

• The first five countries in the capacity of dry cargo and / or bulk carriers (coaster) between 2000 and 12000 DWT in the Mediterranean and Black Sea basin are shown in the graphic on the right page.



Top 5 countries that has the largest fleet in the region by Tonnage Distribution

• The top five countries offering seafarers are presented in the table below

All Seafarers	Officer	Crew
China	China	Filipinler
Philippines	Philippines	China
Indonesia	Hindistan	Indonesia
Russia	Indonesia	Rusya Fed.
Ukraine	Russia	Ukraine

Supplies and requests of officers and seafareres (BIMCO/ISF Manpower, 2015, p.13)

• Mediterranean & Black Sea Basin and Turkish coaster fleet is 597 units and carrying capacity is 3.16 million DWT.

• Turkey has the largest coaster fleet in its region after Russia. Russia has 836 ships and the carrying capacity is 3.93 million DWT.
• More than 40% of World Trade Fleet ships are flagged in Panama, Liberia and the Marshall Islands.

• According to 2018 data, 548 companies in Turkey operate with ship ownership status.

• Due to the sectoral contractions experienced in the last 10 years, the Turkish Maritime Fleet also shrank by 2.2% in 2018 compared to the previous year.

• The number and total tonnages of the Turkish Shipowners are shown below. (Economist Magazine, 2018)

2018	2015	Company	Amount of Ships	Tonnage (DWT)
1	7	Ciner Ship Management	26	2,141,747
2	2	Ya sa Shipping Industry	26	2,048,550
3	3	Marinsa Denizcilik	22	1,726,988
4	-	Advantage Tankers LLC	11	1,519,335
5	9	Arkas Holding	60	1,330,761
6	6	Kıran Holding	17	1,123,308
7	10	Gürgen Denizcilik	6	903,422
8	13	Karadeniz Holding	26	869,247
9	8	İnce AB	15	867,873
10	5	Beşiktaş Shipping Group	16	781,204
11	-	Densay Denizcilik	13	760,813
12	-	TÜPRAŞ	26	668,105
13	12	Akmar Shipping	7	514,250
14	4	Palmali Shipping	76	497,494
15	1	Genel Denizcilik	10	385,550
16	20	Beks Denizcilik	6	381,103
17	11	Kaptanoğlu Holding	6	364,755
18	-	Deval Transport	10	276,057
19	18	ER Denizcilik	5	262,049
20	-	Albros Shipping	51	258,435

Top 20 Largest Ship Owner Companies in Turkey

Chapter 4 - Key Statistical Data

• According to UAB DGM data, 100 million passengers were transported on cabotage lines in 2003, and in 2019 it increased by 51% to 150.5 million.

• According to UAB DGM data, the number of vehicles carried on cabotage lines was 6.2 million units in 2003 and reached 13.4 million in 2019.

B- Ports and Coastal Facilities

• There are 942 coastal facilities in Turkey with a coastal length of 8,443 km. On our shores, there are 210 coastal facilities that include the concept of ports and piers.

• According to 2019 figures, our official registered number of seafarers is 131,992 and the employment number in shipyard, boatyard and boat manufacturing jobs is 21,449.

• As of 2019, the number of boats registered to the mooring register is 116,419.

Registered Boats in the Mooring Register	2019
Amount of Boats that are Registered in the Mooring Register	116.419
• Private boats	90.867
• Fİshing boats	13.618
• Commercial yacht / Speedboat	2.864
• Passenger boats	891
• Others	8.179

Turkey has 942 coastal facilities in 2019, according to official statistics. The distribution of these coastal facilities;

- 386 fisher port
- 210 port facility
- 153 Boat Build Place - 83 Shipyard
- 62 Harbour Launch
- 28 Berths
- 23 Recycling Locations

• There are 185 port facilities with international transport permits subject to ISPS code. There are 158 berths, 38 marina, 19 fishing ports and 400 coastal facilities with operating permits.

• According to 2019 figures, the number of ports is 185 in Turkey. Since 2000, the increase has been 210%.

• Remembering that the coastal length of our country is 8,483 km, in this case there is averagely;

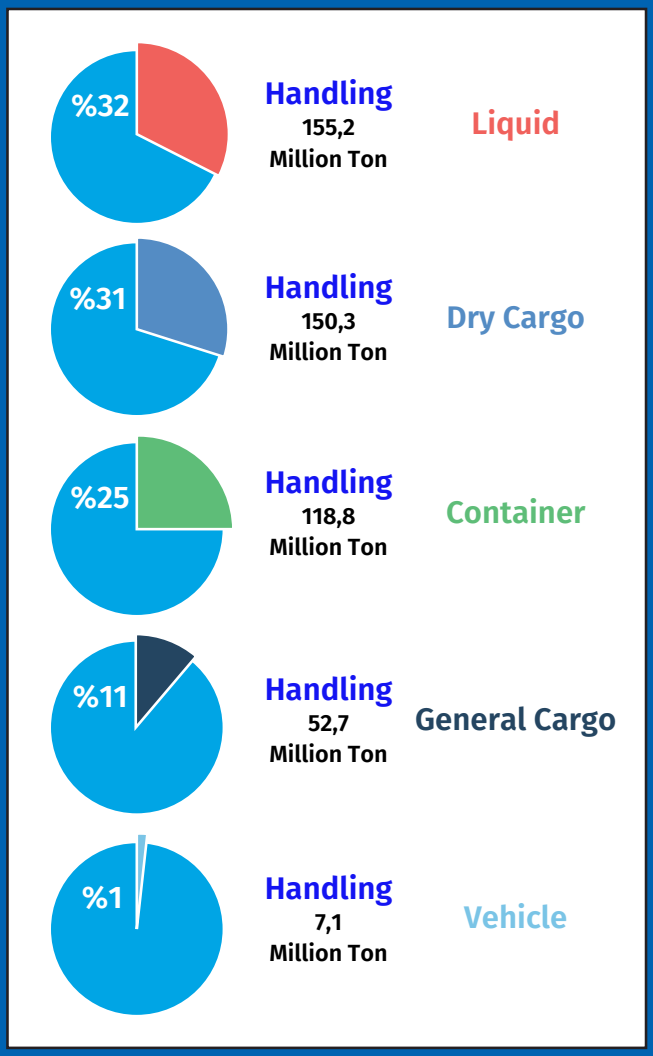
- 1 Port every 40 kilometers,
- 1 Boat Production place every 55 kilometers,
- 1 Shipyard every 102 kilometers,
- 1 Marina every 137 kilometers,
- 1 Recycling place for every 370 kilometers.

• Total cargo handling at our ports has reached 484.2 million tons in 2019.

• When we look at the types of cargo handled at our ports: 32% liquid, 31% dry cargo, 25% container, 11% general cargo, 1% vehicle.

• The capacities used by our ports are 47.3% in general cargo & dry cargo, 44.5% in liquid cargo, 45% in container transportation, 31% in vehicle handling. In other words, our current port capacities are not used.

• Distribution of Cargoes Handled in Turkish Ports in 2019:



Our ports according to installed capacity quantities in 2019;

- 414.1 million tons in dry load (general cargo+solid bulk cargo) - 196.1 million tons realized
- 341.7 million tons in liquid load- realized 152.2 million tons
- 25.9 million TEU- realized 11.6 million tons
- Vehicle capacity 6.8 million tons-realized 2.1

• Turkey port usage performances: (2019)

- 47% in dry load;
- 45% in liquid cargo and containers - 31% in vehicle transportation

Number and percentage of ships visiting our ports in 2019;

- Over 20 thousand container ships 37.3%
- Over 19 thousand general cargo ships 34.64% - Over 7 thousand tankers 13.5%
- Over 6 thousand ferries and cruise ships 11.42%

Distribution of cargo in ports of our geographical regions.

- Marmara region: 38%, 184.6 million tons of maritime trade volume. 43.7% performance volume in dry cargo, 42.1% in liquid cargo, 48% in container transport and 33.8% in vehicle transport.

- Mediterranean region: 36.1%, 174 million tons of maritime trade volume. Performance volume of 50.3% in dry cargo, 42.5% in liquid cargo, 41% in container transport and 40.7% in vehicle transport

- Aegean region: 17.3%, 83.9 million tons of maritime trade volume, 73.5% in dry cargo, 55.9% in liquid cargo, 47.1% in container, 10.3% in vehicle transport.

Chapter 4 - Important Statistical Data

• According to the Type of Cargo Handled in Ports

- Container Transport: 118.8 million tons, 25%
- Crude Oil: 91.5 million tons, 19%
- Hard Coal: 25.3 million tons, 5.2%
- Scrap Iron, 19.7 million tons, 4%
- Diesel: 15 Million tons, 3%

• Container Transport

- Container transportation, which was 2.5 million tons in 2003, has reached 11.6 million tons in 2019. The increase is 365%.
- Marmara region ports carry out 62.5% of container transportation.
- In the Mediterranean Region, MIP is the leading Port with 1.85 Million tons.
- Port Activity According to the Annual Total Freight Handled at European Ports

1. Netherlands
2. Spain
3. Italy
4. United Kingdom
5. TURKEY
6. France

2018 454,370,000 tons.

The total amount of cargo handled at ports between the years 2009- 2018 in the European Economic Area countries: 18% was carried out in TURKISH ports and increased by 56% to 454,370,000 tons.

• Port Activity According to the Annual Total Bulk Loads Handled in European Ports
The total amount of bulk cargo handled in the ports of our country between 2013 and 2018 is in the first place among 28 EU countries.

1. TURKEY
2. Holland
3. Spain
4. United Kingdom
5. France
6. Italy

181,227,000 million tons

17% of the Bulk Cargo Handled in Ports Between 2009 and 2018 in the European Economic Area countries have been carried out in the TURKISH ports and has increased 90%.

This amount at Turkish ports is 5.65 times the amount handled at Greek ports.

• Port Activity According To The Total Large Container Transport Handled Annually At European Ports

The total amount of large container cargo handled at the ports of our country is ranked 5th among 28 EU countries between 2009 and 2018.

1 .Spain
2. Netherlands
3. Germany
4. Belgium
5. TURKEY
6. Italy
7. United Kingdom

Total amount of large container cargo handled at our country's ports (between 2009- 2018) increase among 28 EU countries: 50%; increase in TURKEY is 207 %

* Port Efficiency According To Ro-Ro Transport In European Ports By Type Of Cargo Handled Annually
The total amount of Ro-Ro and self-propelled moving cargo handled at our country's ports is ranked 10th among 27 EU countries in 2018

1. Italy
2. United Kingdom 3. Sweden
4. France
5. Germany
6. Denmark
7. Greece
8. Spain
9. Finland

Increase in total amount of Ro-Ro and self- propelled moving cargo handling at ports of our country and the European Union European Union 35%,
, Greece 58%

• Port activity by type of cargo handled annually in the European ports which is not classified in other sources.

Our country is ranked 4th among 8 EU countries in 2018 in terms of the total amount of cargo that is not classified elsewhere handled in its ports of our country.

1. Holland
2. Spain
3. Sweden

5. Italy
6. United Kingdom
7. Belgium
8. Germany

• Port Efficiency by Yearly Variation of the Annual Load Handled in European Ports

Annual changes in total cargo transportation handled in our country's ports (% compared to the preceding year)

2018.... -2.5
2017.... -9.4
2016.... 3.4
2015.... 8.7
2014.... -0.2
2013.... 1.3
2012.... 4.4
2011.... 6.2
2010.... 15.0
2009.... -3.7

Average growth between 2009-2018 is 2.9
Average of annual changes between 2009 and 2018 in total freight transport handled in all ports of our country (% compared to the previous year)
28 European Union countries Average growth 0.48%
average growth 2.9%

Chapter 4 - Important Statistical Data

Port Activity in European Ports by Inbound (Unloaded) and Outbound (Loaded) Annual Total Cargo Handled

The total amount of cargo handled in and out of our country's ports ranks 4th among 28 EU countries in 2018.

1. Holland
2. Spain
3. United Kingdom
4. **TURKEY**
5. Italy
6. France
7. Germany
8. Italy

The total amount of cargo handled in and out of our country's ports in 2009-2018; 28 EU countries increase percentages, 28 European countries, 20%; **TURKEY 55%.**

• Total Container Volume Handled in European Ports (20 TEU).
The total amount of 20-foot containers handled in the ports of our country is in 6th place among 27 EU countries in 2018.

1. Spain
2. Germany
3. Netherlands
4. Italy
5. Belgium
6. **TURKEY**
7. United Kingdom
8. France

The total amount of 20-foot containers handled in the ports of our country; Increases between 2010 and 2018; 28 European Union countries, 39%; **TURKEY 88%**

• Total Cargo Handled at the top 20 European Ports (tonnes)

The total amount of cargo handled in our country's ports in 2018 is among the top EU country ports;
İzmit 7. - 72.4 million tons
İskenderun, Hatay 11. - 57.4 million tons
Aliağa, İzmir 15. - 53.27 million tons
Ambarlı 26. - 33.6 million tons
Total top 20 - 216.8 million tons

• Comparison in Total Cargo (ton) handled in the top 20 European Ports with respect to the previous year

The increase rates of the total amount of cargo handled in the ports of our country among the Most Peak EU country ports in 2018;

İzmit; -0.4%, 3.48% last 10 years average İskenderun, 3.8%, 11.7, last 10 years average Aliağa, - 3.2%, 3.74% last 10 years average Ambarlı -3.4%, 2.44% last 10 years average

Percentage of increase in the total amount of cargo handled in our country's ports among the top EU country ports in 2018;
Top 20 European Ports 1.1%
Top ports average 5.3%

• Number of Passengers Arriving and Disembarking from All European Ports
Ranked 17th out of 28 EU countries in 2018 according to the number of passengers arriving and disembarking at all ports:

1. Italy - 85.3 million.
2. Greece - 72.5 million.
3. Denmark - 43.7 million.

According to the number of passengers arriving and disembarking at all ports Percentage of Italy 19.1% Percentage of Greece 16.32% Percentage of TURKEY 0.29%,

• Total Number of Ships Entering Their Home Ports at Country Level

It is ranked 10th among 28 EU countries in 2018 according to the Total Number of Ships Entering the Ports of the Country.

1. Greece
2. Italy
3. Denmark
4. Croatia
5. Spain
6. United Kingdom
7. Germany
8. Sweden
9. France

Percentage among 28 EU countries in 2018 by the Total Number of Ships Entering Country Ports

1. Greece 20%
2. Italy 18.5%
3. Denmark 14%

Turkey's percentage increase was 203% in 2018

• Total Number of Ships Entering Their Home Ports at Country Level

It is ranked 10th among 28 EU countries in 2018 according to the Total Number of Ships Entering the Ports of the Country.

Chapter 4 - Important Statistical Data

1. Greece
2. Italy
3. Denmark
4. Croatia
5. Spain
6. United Kingdom
7. Germany
8. Sweden
9. France
10. Turkey

Percentage among 28 EU countries in 2018 by the Total Number of Ships Entering Country Ports
1. Greece 20%
2. Italy 18.5%
3. Denmark 14%
10. TURKEY 2.6%
Turkey's percentage increase was 203% in 2018

• Gross Tonnage (GT) of Total Vessels Entering Ports at Country Level

Ship tonnages (GT) entering our country's ports are in the 10th place among 28 EU countries in 2018.

1. Italy
2. United Kingdom
3. Spain
4. France
5. Germany
6. Greece
7. Sweden
8. Denmark
9. Holland
10. TURKEY 803,300 GT

Ship tonnages (GT) entering the ports of our country

It ranks 10th among 27 EU countries in 2018. Total tonnage percentage was 4.3% at the end of 2018 2018-2009 comparison Increased by 138%.

• Amount of Cargo Handled (ton) Outbound (Loaded) / Inbound (Unloaded) in short-distance transportation in European Ports
The total amount of cargo transported short distances moved and separated from port to port in transport in 2018, Turkey is ranked 3rd among the 28 EU countries.

1. United Kingdom
2. Italy
3. TURKEY 295,283,000 tons
4. Holland
5. Spain
6. France
7. Germany
8. France
9. Germany
10. Finland

Turkey ranks 3rd out of 27 EU countries in 2018 for the total amount of cargo transported to and from ports in Short Distance Shipping. Its share:

Average 250 million tons over the last 10 years
2018
295,283,000 tons

• Total Cargo (Ton) Coming to and from Ports in Short Sea Shipping at Stakeholder European Ports
In short sea shipping among stakeholder ports, in the total amount of cargo handled in and out of the country's ports, Turkey is ranked 3rd among 27 EU countries in 2018.

1. United Kingdom
2. Italy

4. Holland
5. Spain
6. France
7. Germany
8. Finland
9. Denmark
10. Poland

• Comparison of Sea Regions according to the amount of cargo to and from ports in Short Sea Transport between European Ports
According to the amount of cargo in the seas:

1. Baltic
2. North
3. North East Atlantic Ocean
4. Black Sea
5. Mediterranean
6. Other
Total 1,774,532,000 tons

• Total Container Volume Handled Incoming and Outgoing to European Ports in Short Distance Transportation (20 TEU)

The total amount of 20 foot equivalent containers handled short distances to and from the ports of our country is in the first place among 28 EU countries in 2018.

2. Italy
3. Spain
4. Germany
5. United Kingdom 6. Belgium
7. Greece
8. Holland
9. Poland
10. France

Our country ranks 1st among 28 EU countries in 2018 in terms of the total amount of 20-foot equivalent containers handled short distances to and from its ports.

%24
Relative increase in the last 9 years %172

Chapter 4 - Important Statistical Data

C- Marine Industries

Shipbuilding Industry in our Country: Oil Tankers, Chemical Tankers, Bulk Carrier & Container, Heavy Lifting Vessels, Multi-purpose Ships, Platform Support Vessels, Warships, Coast Guard Boat, Tugboat, Mega Yacht, Yachts and Fishing Boats are produced.

• 90.5% of the ships built on a global scale in 2018 belong to China, South Korea and Japan.
• There are 83 active shipyards and 780 boat manufacturing sites in Turkey.

• The total annual capacity of active Shipyards is 4.51 million DWT.

• The number of authorized ship conversion facilities is 23.

• Our country has 23 floating pools and 10 dry pools.

• Our country ranks 4th in the world and 1st in Europe in shipbreaking rankings.

In 2022, the Global Yacht Industry is expected to reach a value of US $ 74.7 Billion.

• With 62 marinas owned by Turkey, it ranks fourth among the countries of the Mediterranean basin and ninth in the world.

• Our Yacht Port capacity on the basis of regions;
- Istanbul-Marmara Coasts: 5,028 Yachts
- North Aegean: 4,107 Yachts
- South Aegean: 4,730 Yachts
- Mediterranean Region:
4,687 Yachts
Total 18,615 Yachts

• Norway 1:6.5, Finland 1:7 and Sweden 1:8 occupy the first three places in the world according to the number of boats per capita, while Turkey ranks twentieth with a ratio of 1:2000. It is even lower than Switzerland and Austria, which have no Seashore.

• Marine tourism revenues in our country, which is surrounded by seas on three sides, constitute 20% of total tourism revenues. Sea tourism revenue reached $ 5.9 billion in 2018.

• The distribution of marinas of Mediterranean countries and capacity status is given below.

	Capacity	%	Marinas	%
France	180,000	35	370	26
Spain	130,467	25	360	25
Italy	170,000	33	500	35
Croatia	17,350	4	121	0.9
TURKEY	18,615	5	75	0.6
Greece	8,060	2	20	0.2

• Our country ranks 4th in the Mediterranean Countries Premier Group distribution.

	Number of Marinas	Ship Connectivity	Shore Lenght /KM
France	370	180,000	4.668
Italy	500	170,000	8.000
Spain	360	130,000	4.964
TURKEY	75	18,615	8.333

• The top 10 products in ship and yacht exports throughout Turkey are given in the table on the side page.

Products	January - December	
	2019	Share
Sea vessels carrying people and cargo	273.736	26.26%
Ferries of all kinds (gross ton. >1000)	210.849	20,23%
Products for watching at sea	139.033	13,34%
Tugs (gros tonilato>300)	65.840	6,32%
Marine tankers	55.205	5,30%
Sailboats - those for watching at sea	46.428	4,45%
Marine motor boats (inboard)	40.151	3,85%
Pulley, winch, capstan, jack, component parts	28.826	2,77%
Other marine tankers	19.913	1,91%
Marine motor boats (inboard, length> 7.5 m)	18.617	1,79%
Top 10 products	898.598	86,21%
Others	143.728	13,79%
Overall total	1.042.326	100,00%

• As of 2019, the number of people employed in Turkey Shipyard/boat Manufacturing locations is 30,910.

• In 2019, $1.22 billion in marine vehicle exports and $1.01 billion in marine vehicle imports were realized, according to the Turkish Statistical Institute for Shipbuilding Industry, Ship Recycling and SeaBed Screening activities.

There are 160 maritime education institutions in our country that provide formal and widespread education in maritime education. Only 56 educational institutions are accredited by the Ministry of Transport and Infrastructure for shipman competence.

• It is known that our number of shipmen is second in the world with approximately 180 thousand and 2400 new officers and 3300 new crew members are added to this number every year from authorized educational institutions. However, despite this, the preference of Turkish seamen on foreign-flagged ships in the world is around 0.1%

• Distribution of institutions authorized by the Ministry of Transport and Infrastructure and providing Maritime Education: There are 88 institutions: Higher Education Council 22, Ministry of National Education 34, Private 32.

• According to (Ulaşan ve Erişen) Turkey 2018 data, there are 118,539 registered shipmen declared by the Ministry of Transport and Infrastructure. According to the same source, there are 47,310 active officers and 71,229 active crews.

• According to Ministry of Transportation and Infrastructure and (Ulaşan ve Erişen) Turkey 2018 data; There are 199,470 amateur Sailors, 585 Maritime Pilots, 2,959 Professional Underwater Man, 196 VTS operators in our country.

• 2019 Istanbul and Marmara, Aegean, Mediterranean, Black Sea Regions Turkish Chamber of Shipping Annual Report contains very detailed information on Agency and Insurance Services

• Ship Agency Statistics are also presented in the table below.

Ship Agency Statistics	
Number of Agencies that have Active Authorization certificate	1029
Branches that have active authorization certificate	224
Active Staff in active agencies	3850
• High School Graduate	1379
• University Degree	1318

Chapter 4 - Important Statistical Data

E- Fishery and Fish Breeding and Aquacultural Activities

• Our country, which is located in a geography surrounded by three sides, has rich seafood.

• It has 178 thousand km2 of natural lakes and 3,442 km2 of dam lakes on a coastline of 8483 km.

• There are 13,618 fishing boats in 2019.

• Turkey has a 0.04% share in world aquaculture production.

• As of 2109, there are 3,836 fishing shelters.

• As of 2019, there are 18,500 fishing boats in our country.

• According to 2019 Fisheries Statistics, there are 386 fishing shelters (19 authorized fishing shelters), 62 marinas, 153 boat manufacturing locations and 28 rickshaw locations in our country.

• According to FAO data, as of 2017, 80.6 million tons in marine aquaculture production and hunting, 11.9 million tons in inland waters, totaling 92.5 million tons.

• According to FAO data, as of 2017, 30.6 million tons in Marine Aquaculture, 49.5 million tons in inland waters, 80.1 million tons in total.

• 2017 World total aquaculture is 172.681 million tons.

• According to the data of the Ministry of Agriculture and Forestry, General Directorate of Fisheries and Aquaculture, Turkey's Aquaculture exports are $ 951.8 million, imports are $ 188.9 million.

According to Turkish Statistical Institute data, as of 2018, according to the amount and values of Aquaculture Production, hunting is 314 million tons and 2,058 billion ₺, Aquaculture is 314.5 million tons and 5.6 billion ₺Total: 7.665 Billion ₺ or 1.59 billion dollars (4.82 ₺= 1$)

• According to the data of the Ministry of Agriculture and Forestry, General Directorate of Fisheries and Aquaculture:

Area of Work	Lenght Group (m)									Total
	0-4,9	5-7,9	8-9,9	10-11,9	12-14,9	15-19,9	20-29,9	30-49,9	50+	
Sea	716	9.098	3.207	762	537	295	462	268	7	15.352
Inland Water	249	2.101	218	218	53	12	0	0	0	2.656
Total	**965**	**11.199**	**3.425**	**785**	**590**	**307**	**462**	**268**	**7**	**18.008**

• According to the data of the Ministry of Agriculture and Forestry, General Directorate of Fisheries and Aquaculture;

Group	Capacity Group (Ton)	Number of Facilities (total)	Total Project Capacity (Ton/Year)
Sea	0-50	172	3.929
	51-100	17	1.415
	101-250	18	3.324
	251-500	68	23.368
	501-100	71	61.524
	1000>	80	160.870
	Total	**426**	**254.430**
Inland Waters	0-50	1.337	21.264
	51-100	105	9.200
	101-250	172	34.594
	251-500	118	51.689
	501-100	125	108.209
	1000>	3	7.400
	Total	**1.860**	**232.356**
Sea + Inland Waters	0-50	1.509	25.193
	51-100	122	10.615
	101-250	190	37.918
	251-500	186	75.057
	501-100	196	169.733
	1000>	82	168.270
	Total	**2.286**	**486.786**

Web Software And Inventory Structure

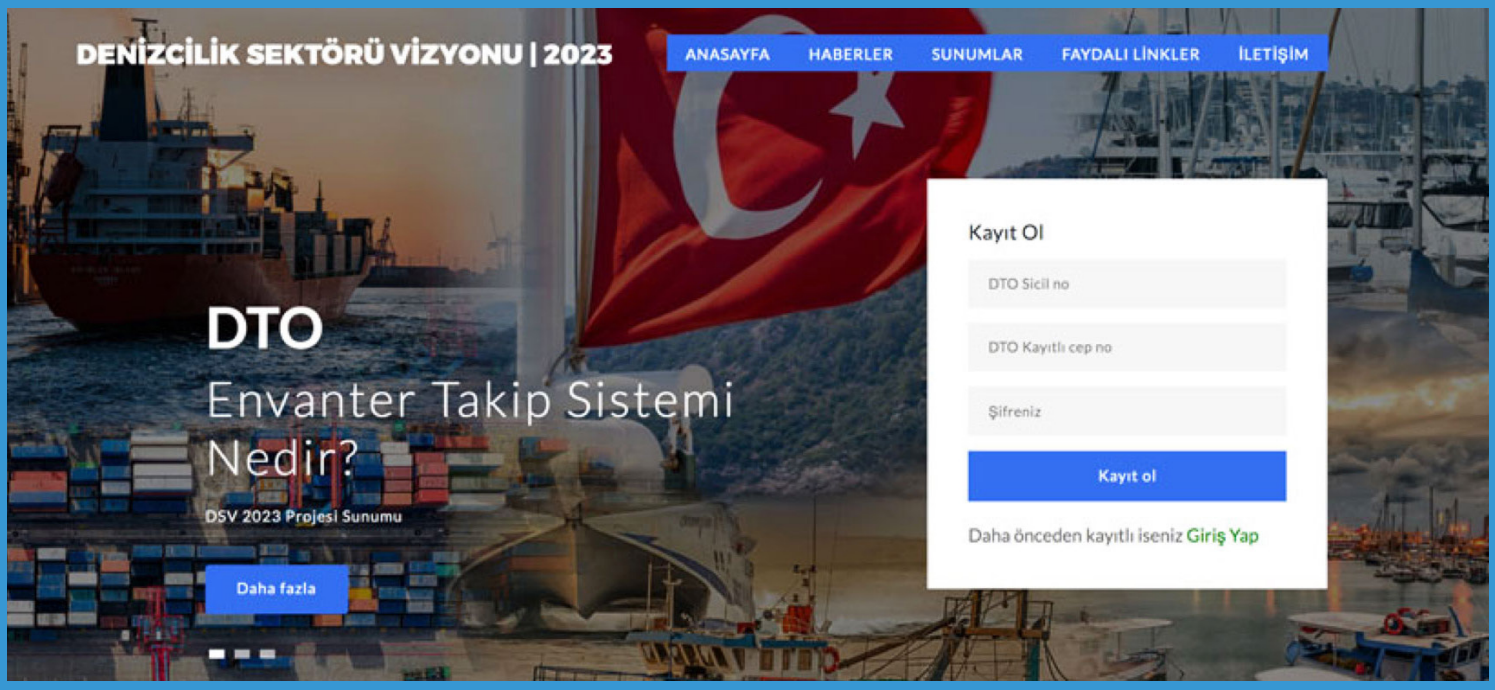
Chapter 5

A software has been developed for the collection of information by accessing companies operating in the Maritime Sector and who are members of Turkish Chamber of Shipping for the calculations of Turkey's Blue Economic Value and employment amount. In addition to gathering information with this software, special software has been developed for the purposes of promoting the strengths and competition of companies on a national and international level.

A calculation algorithm has been developed in which the results obtained from the use of information collection modules in the software will be reflected on the basis of committees as output, while preserving the confidential information of the companies. This chapter introduces the features and scope of this software.

In this project study, a software prepared for presentation via the WEB has been prepared for dynamic renewal of the Turkish Maritime Sector Economic Value and Employment amounts every year by evaluating the valuable data obtained by participating in an inventory study that increases the competition of companies operating in Turkish Maritime Industries on a global scale and participation in the inventory. The aim is to open the values of this sector in Turkey to global stakeholders and to strengthen the brands of sector companies.

In line with these objectives, a website has been built to provide members' economic size and



Maritime Sector Vision 2023 Website Home Page

employment capacity at the sub-sector level as well as critical strategic information and data.

• **Features of web software;**
- Easy-to-upgrade modular structure
- Special functions for online and simultaneous operations
- Extensive reporting interface
- Hierarchical usage differences and authorizations
- Infrastructure compatible with integration efforts
- Logging
- Content management
- Authorization
- Information type definitions
- Export data

The following tools are used as project infrastructure;
- Microsoft Visual Studio. Net
- Asp.Net, Vb.Net, C#.net
- .Net Framework
- Microsoft SQL Server Database

• **Website Inventory Questions**
With the launch of the project, meetings were held with Turkish Chamber of Shipping IT team and the features and architecture of the WEB site were determined. In parallel with these studies, inventory questions to be found on the WEB site were prepared separately in the content specific to each Professional Committee and shared with the Committee Chairs. The approval process of the relevant Committees required for the introduction of inventory questions has not been carried out and an easier-to-fill, leaner second version inventory question set has been prepared.

- First Stage Survey Questions
All 48 Turkish Chamber of Shipping Professional Committees were sent specific comprehensive survey questions specific to their fields of activity (e.g. including key questions such as depth of ports, cranes in ports, shipyard capacities) and contributions, comments, recommendations and approvals were requested from the Committees.

However, in August 2019, the survey questions shared with 48 Committee Chairs were not contributed outside of several Committees, and although they were mentioned many times by the Chamber Management, especially the Parliamentary Meetings, on many occasions, approval was not obtained. The answers to these comprehensive questions were not available while having the power to create an up-to-date, detailed, strong inventory due to the fact that they are direct information from the field.

- Second Stage Survey Questions
Joint Survey Questions prepared for all 48 Turkish Chamber of Shipping Committees have been sent to the Committee Chairs. Afterwards, 48 Committee Chair members participated directly in the regular Chamber of shipping Committee meetings in November 2019, which were shared face- to-face but again did not receive approval.

With the approval of our Speaker and joint decisions, these questions were opened to all members via the web in July 2020. The survey filling process is still ongoing. The questions used in the current survey are given on the back page:

Chapter 5

Inventory Questions

A- Number of Employees

1. Land Employees
- 1-10
- 11-50
- 51-100
- 101-200
- 201-500
- 501-800
- 801-1250
- 1250+

2. Seafarers
- 1-10
- 11-50
- 51-100
- 101-200
- 201-500
- 501-800
- 801-1250
- 1250+

B- General Information

3. Total annual turnover ($)
- 0 – 99,999
- 100.000 – 999,999
- 1.000.000 – 4,999,999
- 5M-10M
- 10M-20M
- 20M-35M
- 35M-60M
- 60M+

4. Annual export amount ($)
- 0 – 99.999
- 100.000 – 999.999
- 1.000.000 – 4.999.999
- 5M-10M
- 10M-20M
- 20M-35M
- 35M-60M
- 60M+

5. **Annual import amount ($)**
- 0 – 9,999
- 100.000 – 999,999
- 1.000.000 – 4,999,999
- 5M-10M
- 10M-20M
- 20M-35M
- 35M-60M
- 60M+

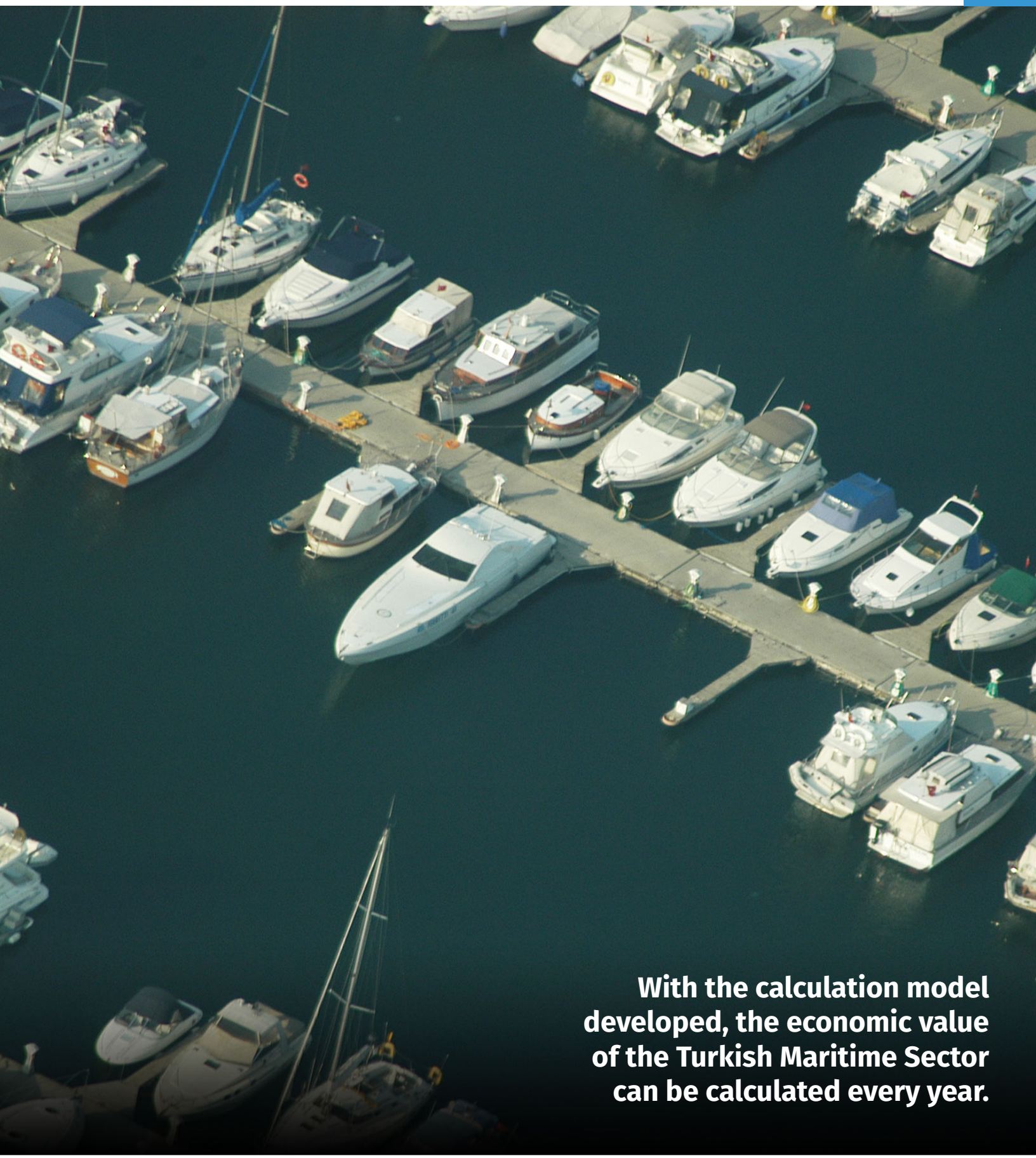
6. Interest in product/service / technology localization / study / project
- Yes
- None

7. Strategic Plan
- Yes
- None

8. Growth forecast for the near, medium and long term
- In 3 Years, %.....
- In 5 Years, %.....
- In 10 Years, %.....
- None

9. Specify the three biggest problems you encounter in your business activities in order of importance. (Character limit is 500 words)
- 1.
- 2.
- 3.

10. Specify the three biggest opportunities you can use to improve your business activities and grow your company in order of importance. (Character limit is 500 words)
- 1.
- 2.
- 3.



With the calculation model developed, the economic value of the Turkish Maritime Sector can be calculated every year.

Economic and Employment Values of The Turkish Maritime Sector 2018-2019

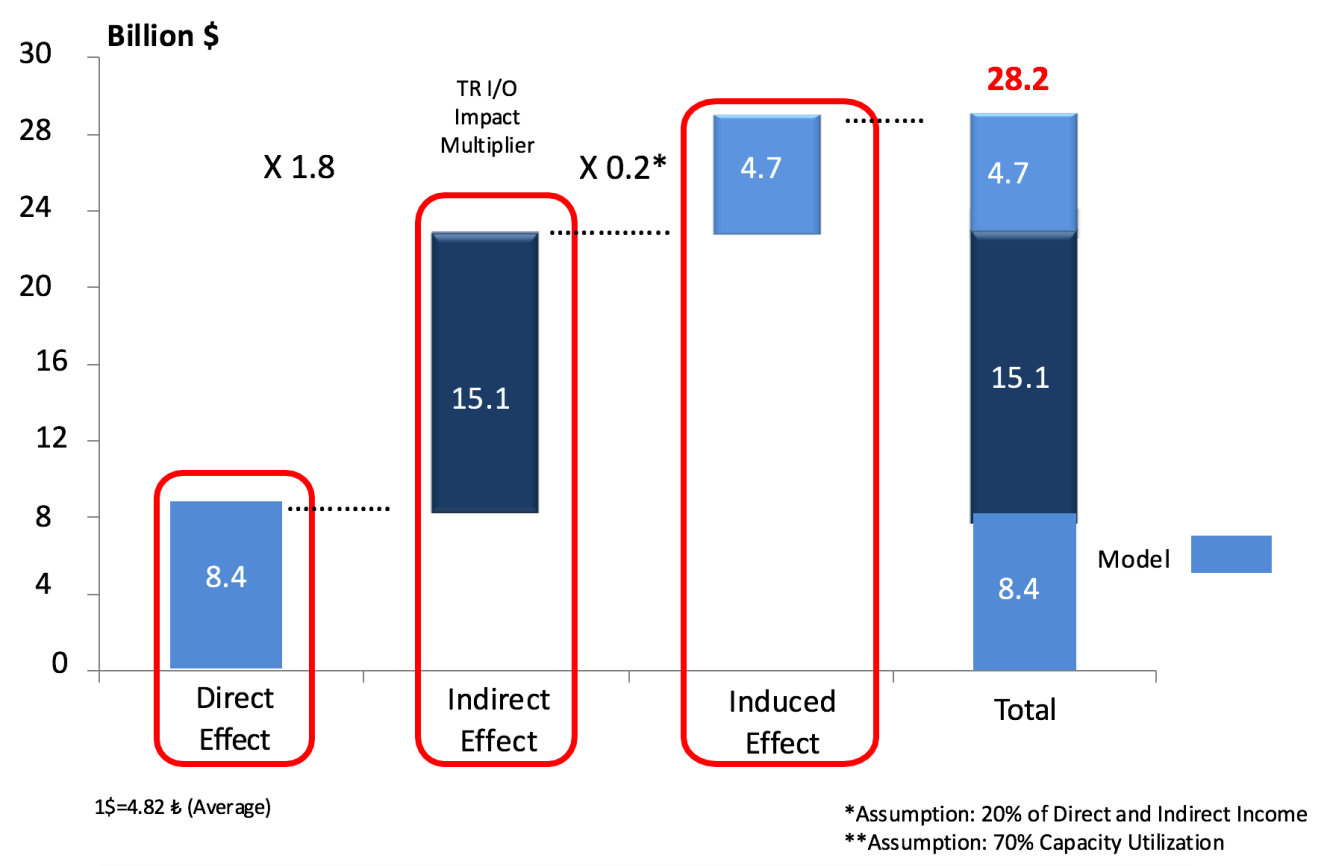
Chapter 6

The following are the values that emerged as a result of the data analysis in 5 groups made in accordance with the Oxford Economics Model selected for this study.

A- Total economic value generated by the transportation industry
The table showing the Members of the Committee of The Turkish Chamber of Shipping Group A is given below

Group A Turkish Chamber of Shipping Committees

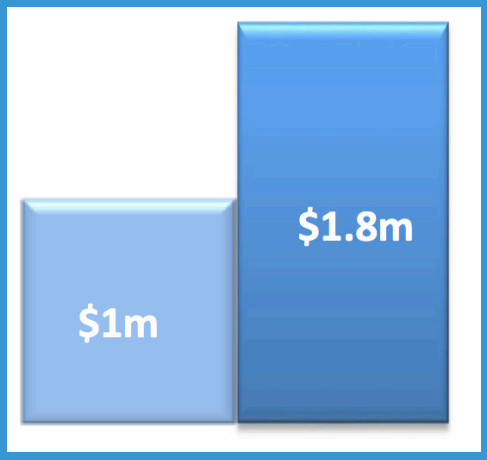
Committee Code	Committee	Main Group	Model Group	Number of TCS Member Companies
14	ALL KINDS OF PASSENGER TRANSPORTATION AND SHIP MANAGEMENT WITH TOURISTIC PURPOSES	11	A	234
31	TRANSPORTATION OF PASSENGER SHIP WITH SCHEDULED SERVIVE IN/OUT PORTS		A	373
				Total: 607
15	DRY CARGO SHIPPING WITHIN CABOTAGE LINE	12	A	81
16	DRY BULK CARGO SHIPPING WITHIN CABOTAGE LINE AND MEDITERRANEAN SEA		A	83
17	CABOTAGE LINE GENERAL CARGO SHIPPING		A	77
18	CLOSE-RANGE DRY CARGO SHIPPING		A	69
19	CLOSE-RANGE DRY BULK CARGO SHIPPING		A	71
20	CLOSE-RANGE GENERAL CARGO SHIPPING		A	77
22	OVERSEA DRY CARGO SHIPPING		A	149
23	DRY BULK AND GENERAL CARGO SHIPPING WITHIN MEDITERRANEAN		A	88
24	OVERSEA DRY BULK CARGO SHIPPING		A	242
25	OVERSEA GENERAL CARGO SHIPPING		A	82
47	OTHER CARGO SHIPPING		A	101
				Total: 1120
27	TANKER TRANSPORTATION (OIL, CHEMICAL, WASTE DISPOSAL, LPG, LNG)	14	A	147
				Total: 147
29	CONTAINER SHIP TRANSPORTATION	15	A	150
				Total: 150
30	RO-RO CARGO SHIP TRANSPORTATION	16	A	99
				Total: 99
			Total Number of TCS Member Companies	2.123



Group A Economic Values of the Ship Freight Industry

The direct economic value of the freight transport industry by ship was calculated as $8.4 billion as a result of detailed calculations. The algorithmic approach to calculation is included in the additional A report. 70% of the value calculated in this figure, which covers the turnover of the entire Maritime Trade Fleet, is reflected in this table. It is a fact that this cluster has a very significant multiplier effect on the country's economy

With the coefficient obtained from I/O tables, every $1 Million created by the Shipping industry creates value of $1.8 Million as an additional Back Impact link at the supply chain points of the economy. In addition, the budget spent by employment in this sector is modeled in the Turkish Statistical Institute tables, where it provides an additional 20% added value. This participated in calculations as an induced effect In the current model, the activities of all ships owned by Turkish and foreign flags are included in the model.

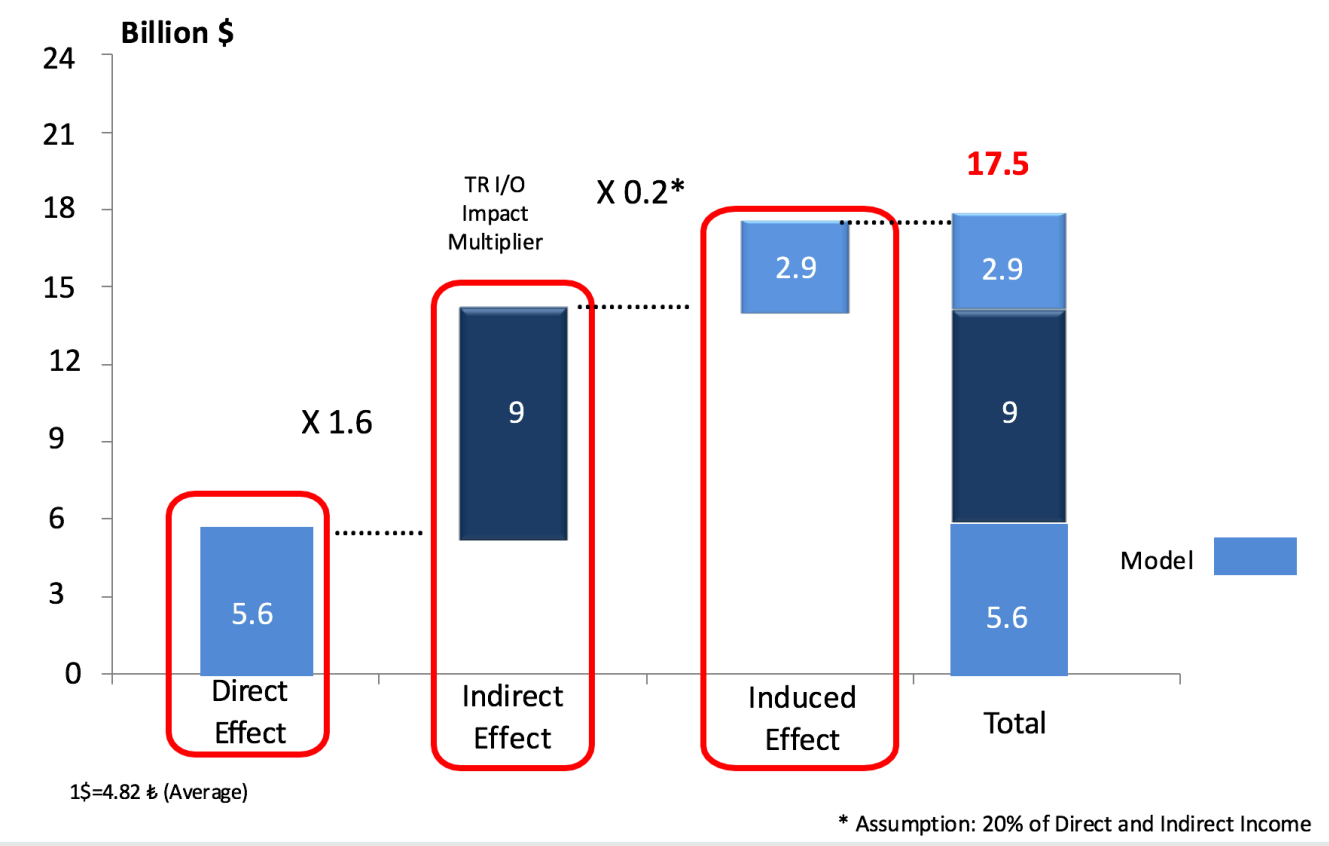


B- Total economic value created by port industry sector of Turkey

Below is our table is showing the Members of the Committee of The Turkish Chamber of shipping Group B.

Committee Code	Committee	Main Group	Model Group	Number of TCS Member Companies
33	PORT MANAGEMENT	18	B	163
34	CARGO HANDLING ACTIVITIES	17	B	93
			Total Number of TCS Member Companies	256

Group B Turkish Chamber of Shipping Committees

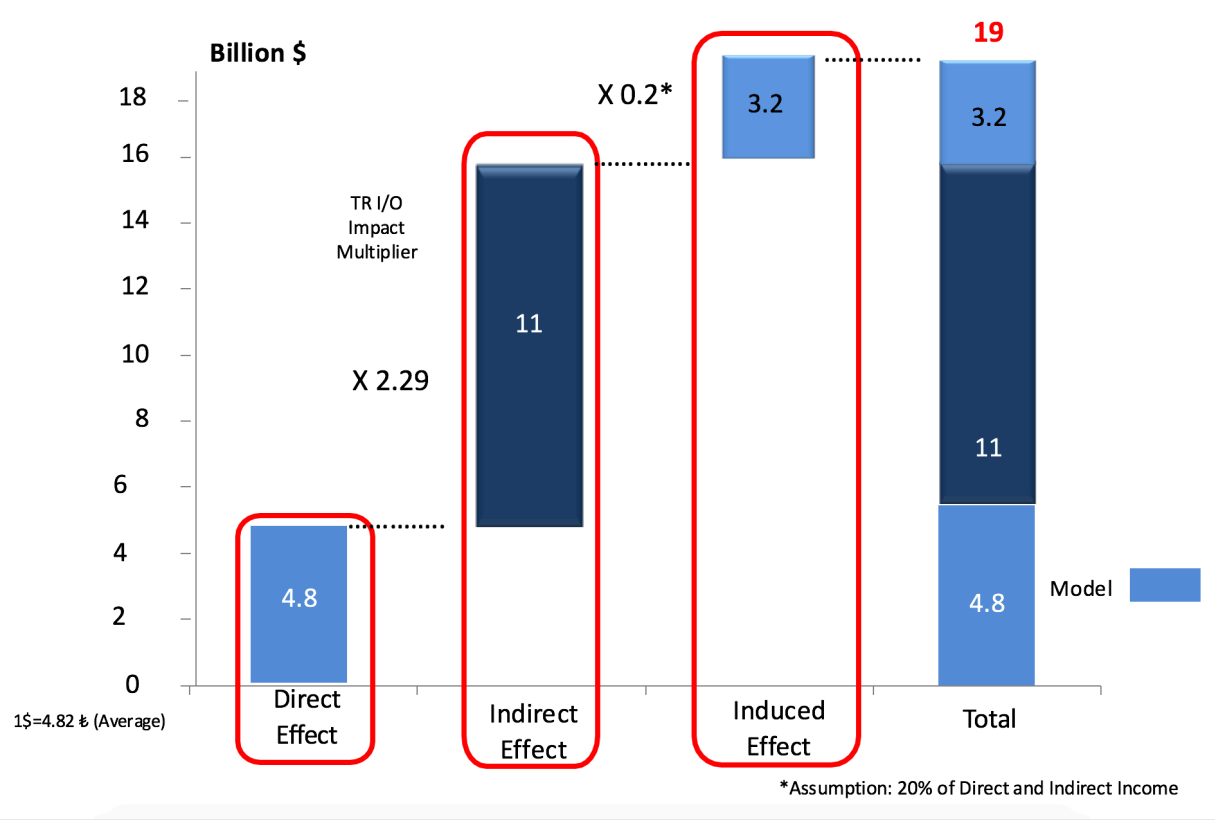


Group B Economic Values of the Port Industry

The economic value against the activities of the port companies was calculated based on the total handling in all Turkish ports. Cargo values screened at ports are registered in our country. As a result of calculations made according to the types of cargo in the handling, it is also a fact that the port industry has a very pronounced multiplier effect on the country's economy. Each $ 1 million value created by the port industry creates an additional $ 1.62 million in value elsewhere in the economy.

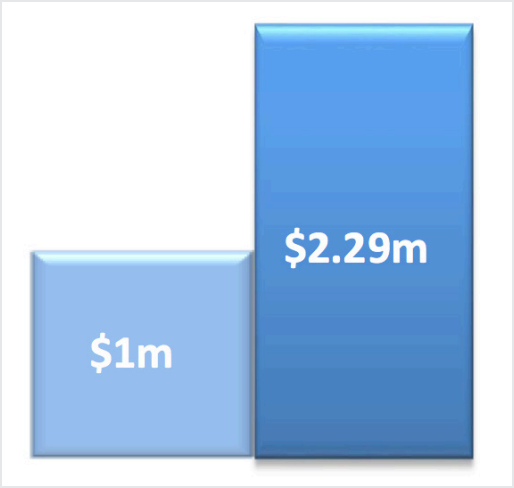
The financial size obtained by Turkish- owned companies operating abroad from the ports they operate in different geographies is not taken into account because their turnover cannot be accessed due to their turnover. The added value coefficient created in this cluster is also Calculated as 2.35. The total added value of the sector to the Turkish economy is 17.5 billion Dollars.

C- Total economic value created by the sea leisure and shipyard industry



Group C Economic Values of Marine Industries

It is a fact that the Industries included in Cluster C have a very pronounced multiplier effect on the country's economy. Every $1 Million value created by the sector, which covers priority areas such as Shipbuilding sectors, Ship Dismantling and Marinas, creates an additional $2.29 Million in value elsewhere in the Turkish economy.



The total added value made by sector C to the Turkish economy is 19 Billion Dollars.
The marina operating activities of Turkish-owned companies operating abroad are not included in the accounts because the resources of their turnover cannot be accessed.

On the other hand, especially for companies in

the field of marine fuel oil supply, first of all data from the Chamber of shipping and data from the Turkish Statistical Institute were used for detailed examination. It was not used in Group C calculations, as it is not possible to get details of how much of the data obtained from the Energy Market Regulatory Authority that can be used in this area was carried out by companies that are members of the Chamber of shipping. However, the Energy Market Regulatory Authority has estimated the amount of marine fuel sales for 2016 at about $ 1 billion. In light of this information, it should not be ignored that the amount of turnover obtained as a result of the model used can increase by about $ 500 million, assuming that all conditions occur in the same way for 2019.

Data inconsistency and lack of data collection standards in the resources of all fields of activity also manifest themselves for these activities
and the necessity of using methods based on fully and accurately defined NACE Codes related to statistical

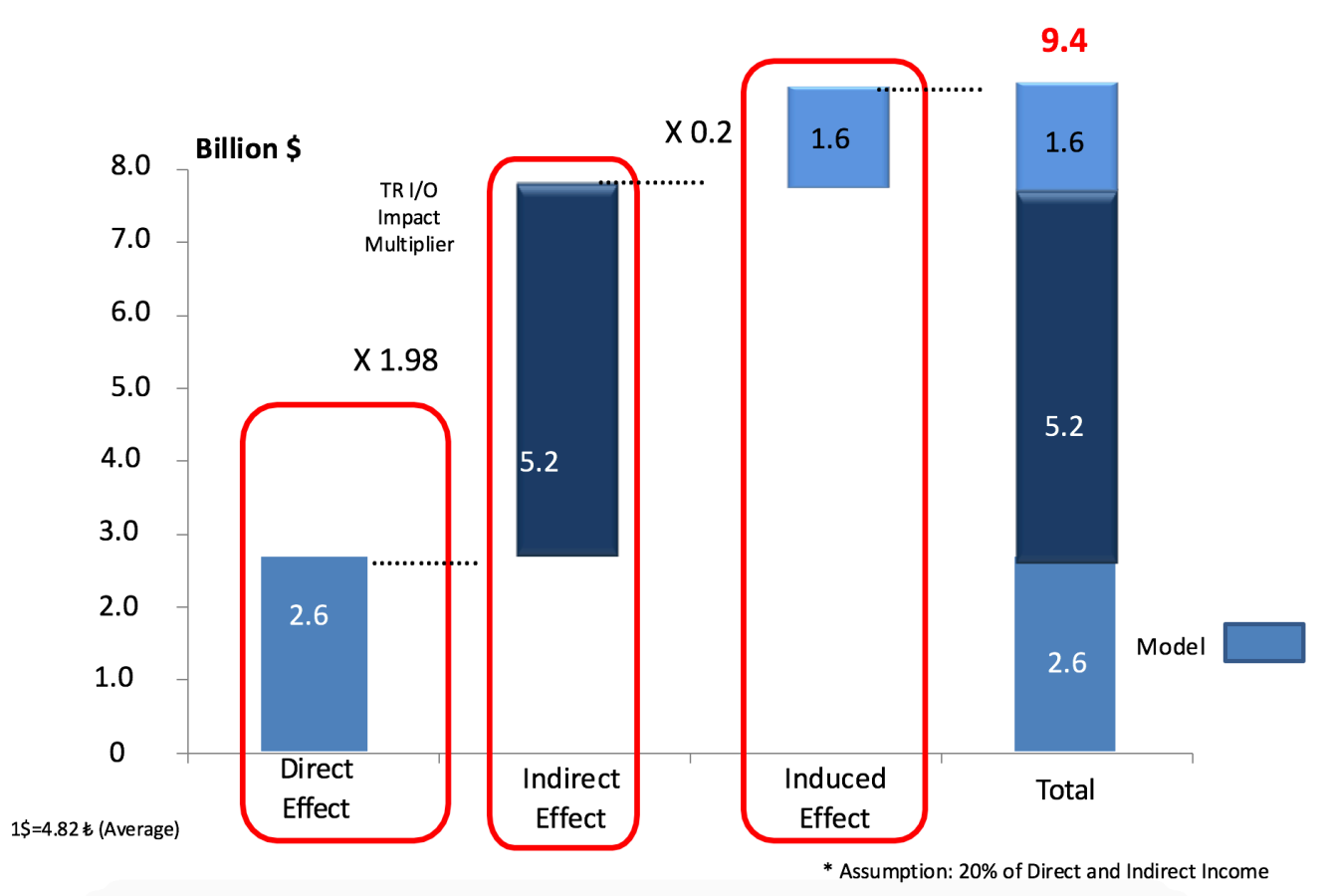
data collection, query and collection methods are once again demonstrated.

On right side table is showing the Members of the Committee of The Turkish Chamber of shipping Group C.

Committee Code	Committee	Main Group	Model Group	Number of TCS Member Companies
3	SHIP BUILDING SUB-INDUSTRY	2	C	82
				Total: 82
4	YACTH BUILDING SUB-INDUSTRY	3	C	94
				Total: 94
5	SHIPBUILDING MAINTENANCE AND REPAIR YARDS	4	C	247
				Total: 247
6	YACHT BUILDING MAINTENANCE AND REPAIR YARDS	5	C	189
				Total: 189
7	MAINTENANCE AND REPAIR OF SHIPS AND YACHTS	6	C	564
				Total: 564
8	SUBMARINE SERVICES AND BUILDING ACTIVITIES	7	C	175
				Total: 175
10	COMMERCIAL ACTIVITIES OF NAVAL STORES	9	C	134
11	SHIPSUPPLIERS		C	156
12	MANUFACTURING AND COMMERCIAL ACTIVITIES OF MARINE INDUSTRIAL GOODS		C	79
21	WHOLESALE TRADE OF SHIPSUPPLIERS AND OVERSEA WHOLESALE TRADE ACTIVITIES		C	87
				Total: 456
13	SHIP BUNKER FUEL SUPPLY ACTIVITIES	10	C	96
28	TANKER TRANSPORTATION OF SHIP FUEL AND BUNKER		C	73
				Total: 169
32	LOGISTICAL ACTIVITIES OF MARITIME TRANSPORTATION	17	C	251
				Total: 251
38	YACHT MANAGEMENT	21	C	1286
39	MANAGEMENT OF EXCURSION BOATS		C	583
				Total: 1869
45	MARINA MANAGEMENT	24	C	99
				Total: 99
46	DIVING TOURISM ACTIVITIES	25	C	205
				Total: 205
48	WATER SPORTS ACTIVITIES	26	C	179
				Total: 179
			Total Number of TCS Member Companies	4.579

Group C Turkish Chamber of Shipping Committees

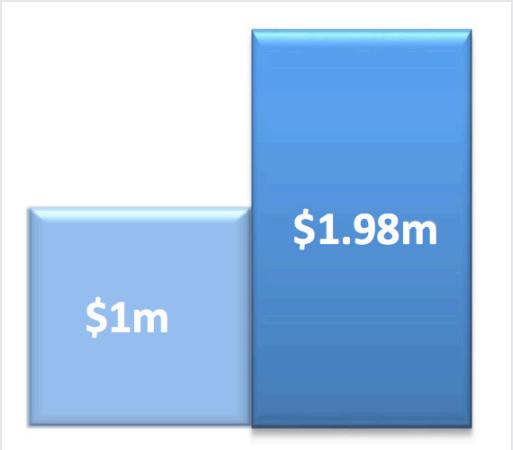
D- Economic Values of the Maritime Service Industry



Economic Values of the Maritime Service Industry

It is a fact that companies operating in Industry D (such as agents, insurers, freighters) have a very pronounced multiplier effect on the country's economy. Every $1 Million created by sector D creates

an additional $1.98 Million in value elsewhere in the economy Total economic value was determined as $9.4 Billion.



Ship certification, classification services and flag representation activities in Committee 35, shipman supply to overseas companies, software prepared for the operations of ships and the activities of technology companies in general were also evaluated and included in the model in Committee 44 calculations.

Committee Code	Committee	Main Group	Model Group	Number of TCS Member Companies
9	COMMERCIAL ACTIVITIES OF SHIPS AND VESSELS	8	D	106
				Total: 106
26	BROKERAGE SERVICES	13	D	99
				Total: 99
36	FORWARDER SERVICES	17	D	85
				Total: 85
35	ACTIVITIES OF CLASSIFICATION SOCIETIES, INSURERS, MARITIME EXPERTS AND SURVEYORS	19	D	143
				Total: 143
37	SHIP BROKERS AND FREIGHT COMMISSIONERS	20	D	339
				Total: 339
40	CONTAINER SHIP AGENTS	22	D	765
41	PLIED SHIP AGENTS		D	121
42	UNPLIED SHIP AGENTS		D	122
43	COASTAL SHIPPING AGENCIES		D	283
44	MARINE EDUCATION, ENGINEERING, ADVISORY AND SUPPORT IN MARINE ACTIVITIES	23	D	180
				Total: 180
Total Number of TCS Member Companies				2.243

Group D Turkish Chamber of Shipping Committees

Above table is showing the Members of the Committee of The Turkish Chamber of shipping Group D.

E- Fishery and Fish Breeding and Aquacultural Activities

Committee Code	Committee	Main Group	Model Group	Number of TCS Member Companies
1	FISHERY ACTIVITIES	1	E	176
2	FISH BREEDING AND AQUACULTURAL ACTIVITIES		E	88
				Total: 264
			Total Number of TCS Member Companies	264

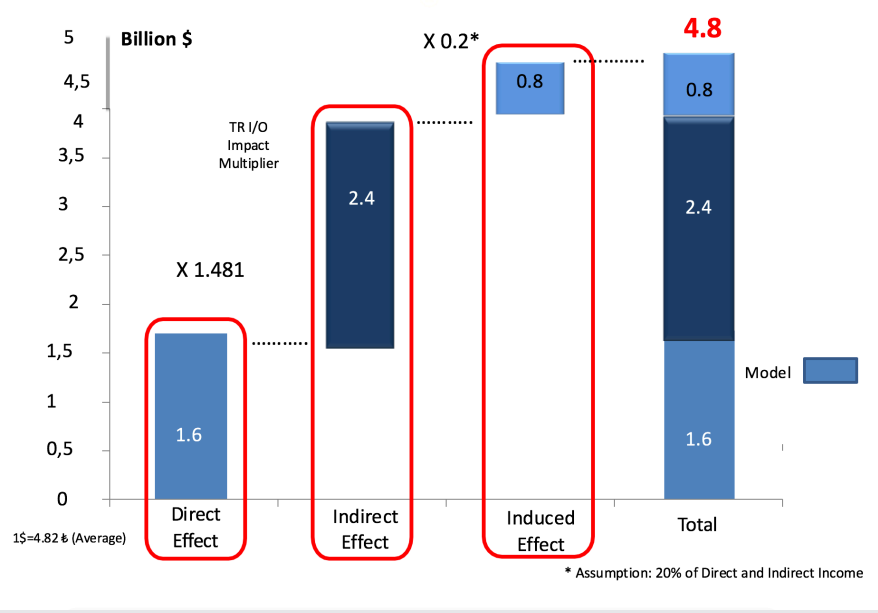
Group E Turkish Chamber of Shipping Committees

Above table is showing the Members of the Committee of The Turkish Chamber of shipping Group E.

It is a fact that the Fishing and Fish Production and Breeding Farm Activities Industry has a very significant impact on the country's economy. Every $1 Million value generated by the Fisheries and Aquaculture sector creates an additional $1.48 Million elsewhere in the economy.

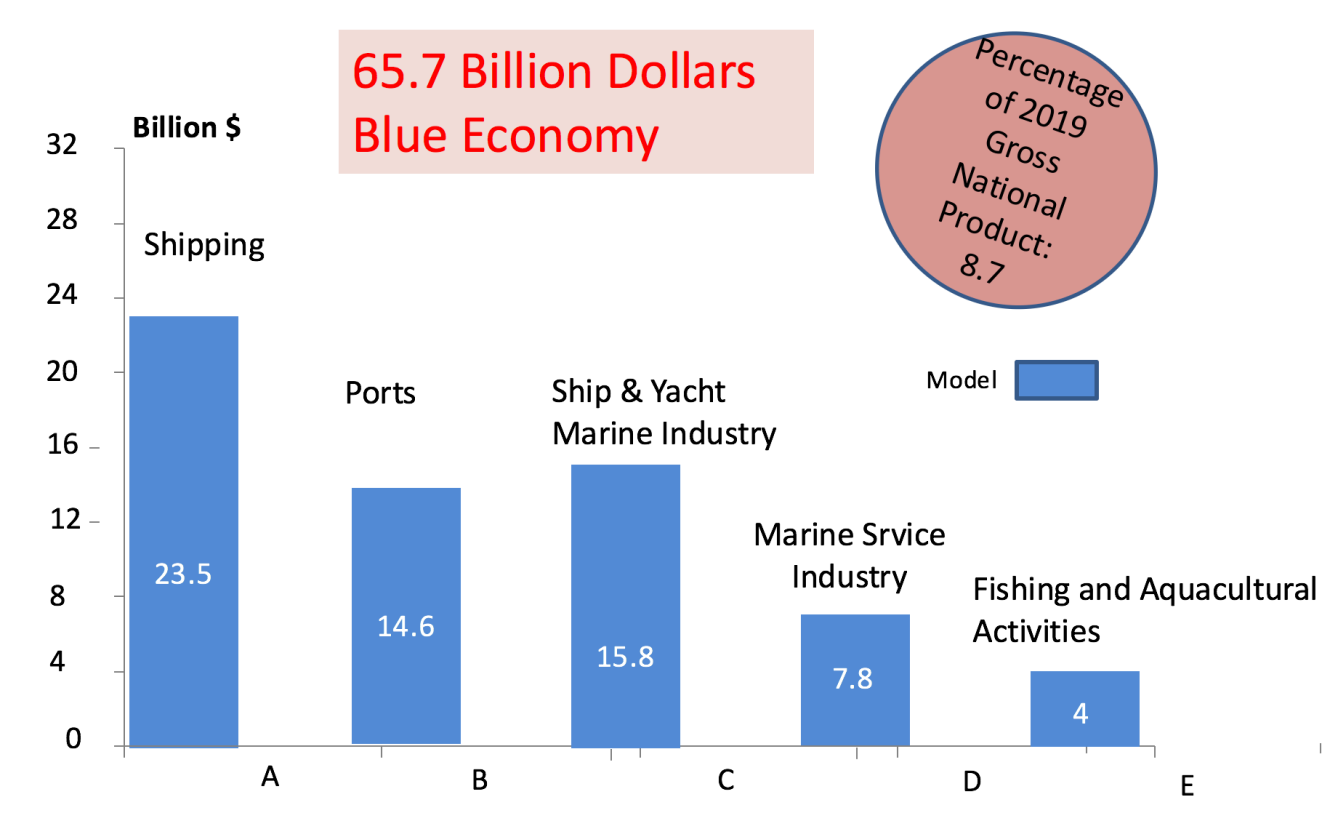
The total impact of activities in cluster E was $4.8 billion, including $1.6, 2.4 and $0.8 billion respectively.

Overseas Fishing Activities are seen in promising openings regarding fishing as in many international areas of Turkish Seafaring
The companies carrying out these activities are constantly improving their working capacities and carrying out sectoral initiatives connected to the sea, such as the production of fish- based products.The fact that the aforementioned company activities take place within the borders of foreign countries creates difficulty in determining the financial size and human resource usage figures. In the researches, it is thought that a financial volume of 50 million dollars was formed with approximately 30 boats and 500-600 Turkish human resources. (Source: Foreign Economic Relations Board Africa Regional Directorate information sharing).



Group E Fishery and Fish Breeding and Aquacultural Activities Industries Economic Value

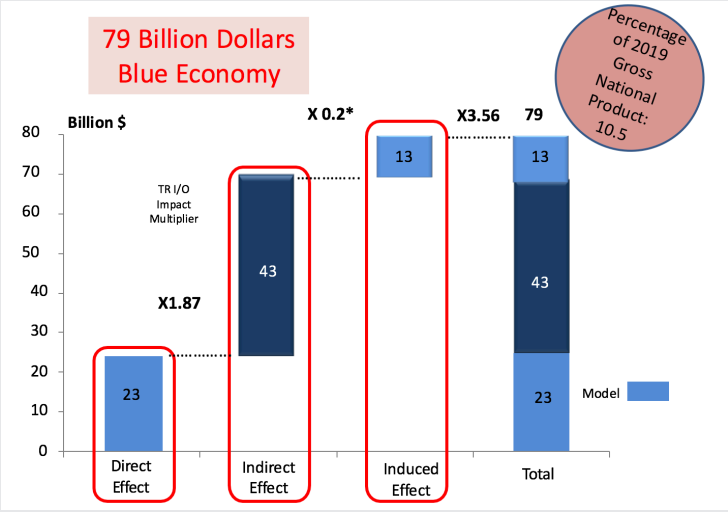
Total Turkey Maritime Sector Big Picture of Economic Values



Economic value of the maritime sector with direct and indirect effect

The economic value calculated by I/O model, which is dependent on the data of the Turkish Statistical Institute, is $70 billion. This level evokes the press report of Mr. Binali Yıldırım, a former Prime Minister of the Republic of Turkey, in 2008 with the press report "Sector Size 50 Billion Dollars". On the other hand, when considering the economic effects induced by the sectors, side figure shows the total effect.

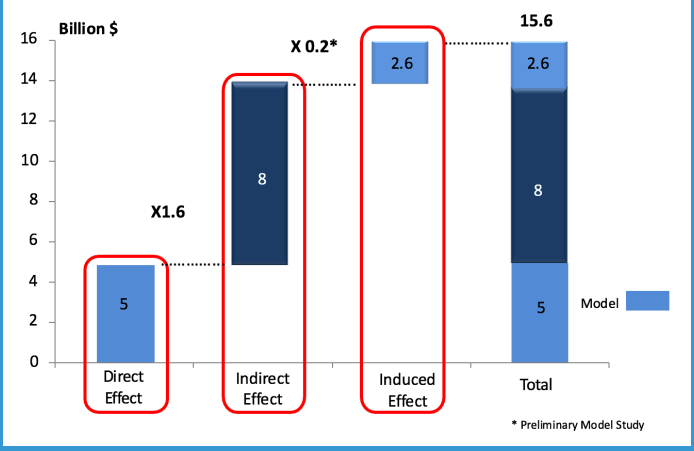
The total economic value of the Turkish maritime sector is $ 79 billion.



Maritime Sector Economic Value with Direct, Indirect and Induced Effect

Blue Homeland consciousness, on the other hand, has brought a new perspective to the sector. Military and Defense activities have also increased, especially in the sector.

Projects to increase our Navy and Coast Guard force are being developed quickly. An insight into the Military Maritime Sector, which we will include in the Blue Economy, is presented below. International market conditions and coefficients in accordance with national I/O models were used in the forecast.



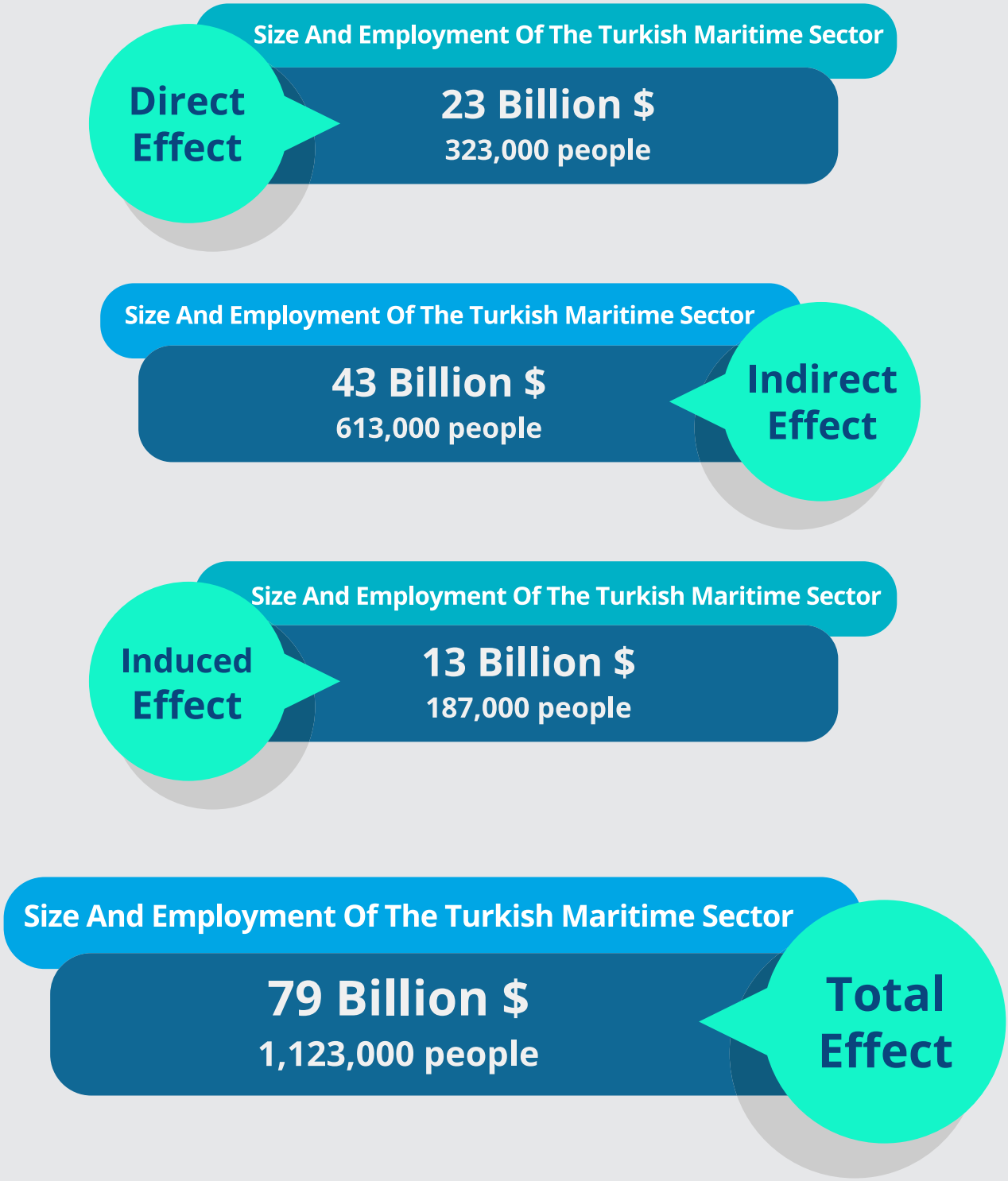
Military Maritime Sector Economic Values with Direct, Indirect and Induced Effects

The total economic value combined with the Blue Economy and Blue Homeland concept is presented. As can be seen, the economic value is close to a level of 100 Billion Dollars. This result shows us that the Maritime Sector is a very critical sector.

In the near future, an economic value of over $100 billion will be reached by adding the event of possible Black Sea natural gas reserves to Industry C.

Conclusion

Chapter 7



References

References and Reports	Face to Face Meetings
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PROJECT REPORT

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