PORT OPERATORS ASSOCIATION OF TÜRKİYE

TÜRKLİM

TURKISH PORT SECTOR
2025 REPORT

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TURKISH PORT SECTOR 2025 REPORT
Safe and Secure Ports

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FOREWORD

Maritime transport is a key element of global trade, strengthening the world economy and enabling global trade. However, in recent years, many challenges have emerged in the maritime sector that threaten efficiency, reliability and sustainability. In particular, maritime strategic choke points such as the Suez and Panama canals have been seen to provide significant advantages for global transport, but also to pose great risks. The climatic, geopolitical and operational consequences of disruptions in these maritime choke points lead to serious disruptions in global trade.

The grounding of the Ever Given container ship in the Suez Canal in 2021 highlighted the widespread impact of such disruptions on trade. The COVID-19 pandemic, which started in 2019 and lasted for 2 years, the problems in the Suez Canal and Panama Canal, the Ukraine war and finally the security threats in the Red Sea have deeply affected the maritime sector. As of late 2023, due to the crisis in the Red Sea, large tonnage ships had to avoid the Suez Canal and follow longer routes, which increased transport costs and transit times. Similarly, the lowering of the water level in the Panama Canal led to a decrease in daily vessel transits and the use of alternative and longer routes. The effects of all these events have been profound.

All these changes have not only increased costs in the maritime sector, but also deepened environmental impacts. The diversion of ships to longer routes increases fuel consumption and carbon emissions, with serious consequences for sustainability. All these factors have increased the vulnerability of global maritime transport and made disruptions in the sector commonplace.

Published regularly since 2006, this latest issue of the TÜRKLİM Port Sector Report for 2025 has been prepared in the light of all the above-mentioned developments and with the theme of “Safe and Secure Ports”. I would like to extend my thanks to our consultants, members and TÜRKLİM employees who contributed to the preparation of the report.

TÜRKLİM will continue to propose solutions that will contribute to sustainable port management targets based on Atatürk’s strategic vision for the maritime sector and additionally for public interest, and will continue its efforts to develop more environmental friendly, efficient, safe and secure port services.

Hamdi ERÇELİK
Port Operators Association of Türkiye (TÜRKLİM)
Chairman of the Board of Directors

PREFACE

The Turkish Port Sector 2025 Report provides a comprehensive assessment of recent events affecting maritime trade and the port sector by shedding light on current developments. This report, which has been prepared in order to understand current issues and events, interpret the results, learn lessons and take steps, continues its mission of being a guide for the port sector.

The report presents concrete outputs, data and statistical evaluations of the maritime sector for the years 2023 and 2024. Starting from the current developments in the world and Turkish economy and trade, the global and local dimensions of the maritime and port sector have been comprehensively discussed. Developments in world maritime trade, container transport, dry bulk cargoes, liquid cargoes, cruise sector, shipbuilding industry and ship recycling sector are analysed in detail. Developments in the Turkish port sector have been evaluated together with expert opinions. In addition, special dossiers such as safety, security, stability hazards and cyber security in maritime under the heading of safe and secure ports are included, while solution proposals such as the agenda of the Turkish port sector, incentive needs, railway-logistics connections, green transformation and legislative problems are also discussed.

We would like to thank the Republic of Türkiye Ministry of Transport and Infrastructure, IMEAK Chamber of Shipping and our valuable members for providing the basic data and support for the preparation of this report. We would also like to extend our sincere thanks to the members of TÜRKLİM Board of Directors, our employees, Dr. Ersel Zafer ORAL and Prof. Dr. Soner ESMER for writing the report and TÜRKLİM Secretary General Mr. Faruk DOĞAN for his contribution to the report. We hope that the report will contribute to the port sector.

Turkish Port Operators Association
2025

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CHAPTER 1

CURRENT DEVELOPMENTS

CHAPTER 1: CURRENT DEVELOPMENTS

1.1. Developments in World Economy and Trade[1]

Global growth rates are still far from the average growth rates of the early 2000s. Between 2000 and 2019, global growth was 3.7%. Global inflation rose above 8% in 2022. In 2025 and 2026, global growth is projected to be 3.3% and rising global headline inflation (CPI) is expected to fall to 4.2% in 2025 and 3.5% in 2026. Economically developed countries are expected to recover faster than developing countries.

Uncertainties in economic policies have increased sharply, although they vary across countries. In many critical countries around the world, expectations of policy changes due to newly elected governments in 2024 and new ones in 2025 have led to low economic indicators. Political instability in a number of Asian and European countries has shaken markets, and additional uncertainties have emerged as progress on fiscal and structural policies has slowed. Moreover, geopolitical tensions, including in the Middle East, and global trade frictions remain high. This situation adds to uncertainties

In this section, developments in the world economy and trade for 2024 and the near term are analysed under separate headings.

1.1.1. General Economic Assessment

Despite the Russian Federation–Ukraine war, challenges in the Suez Canal, and other adverse developments discussed in later sections of the report, global economic stability appears to persist. However, the global risk outlook appears to be on an improving trajectory in the medium term, as overall risks continue to decline. Although economic growth is projected in the United States, other countries are expected to experience contractions driven by political risks. Economic stability naturally

[1]The data under this heading are mainly compiled from OECD, IMF, World Trade Organisation and UNCTAD news releases. Since this chapter was written in February 2025, data for 2025 are generally estimated.

varies significantly across countries. In 2024, despite disappointing data releases from several major Asian and European economies, global GDP growth in the third quarter aligned with expectations. China's growth remained below expectations at 4.7% year-on-year. While developments in global exports helped offset stagnation in other indicators, the effect was limited. Stagnation in the property market and low consumer confidence indices—particularly in Türkiye, but also globally—indicate that consumption is progressing more slowly than expected. Other manufacturing centres, such as China, have also been slow to recover. In India, growth—particularly in industrial activity—has fallen short of expectations. Within the European Union, Germany's performance lagged behind that of other member states, contributing to subdued growth across the Euro Zone. Although consumption increased in the region, the manufacturing sector and goods exports continued to show weakness. In Japan, another major export economy, production contracted slightly due to temporary supply disruptions. By contrast, momentum in the United States remained strong, with the economy growing by 2.7% year-over-year in the third quarter, supported by robust consumer spending.

Energy commodity prices are expected to fall by 2.6% in 2025. This reflects lower oil prices due to weak Chinese demand and strong supply from countries outside OPEC+ (Organisation of the Petroleum Exporting Countries and some non-member countries, including Russia). On the other hand, colder than expected weather conditions increased energy demand.

The reduction in natural gas supplies by Russia, the ongoing war between the Russian Federation and Ukraine, and the suspected sabotage of the Nord Stream pipeline have all undermined the sustainability of energy deliveries through existing pipelines. In response, the European Union has sought alternative energy sources—a shift that has gradually contributed to restoring energy supply security and rebalancing supply, demand, and prices. As a result, from 2022 onwards:

- LNG imports increased, primarily from the United States and Qatar,
- The EU diversified its gas supply through countries such as Norway and Algeria,
- Renewable energy investments accelerated.

By 2023, markets began to stabilise due to the EU's shift towards alternative energy sources and the implementation of demand management measures, including consumption reduction.

On the other hand, non-fuel commodity prices—particularly food and beverages—are expected to rise by 2.5% in 2025, driven by adverse weather conditions affecting major producing countries.

Course of Global Growth

In 2025, global growth is expected to remain stable, though modest. Growth projections of 3.3% for both 2025 and 2026 fall below the historical average of 3.7% recorded between 2000 and 2019 (**Figure 1.1**).

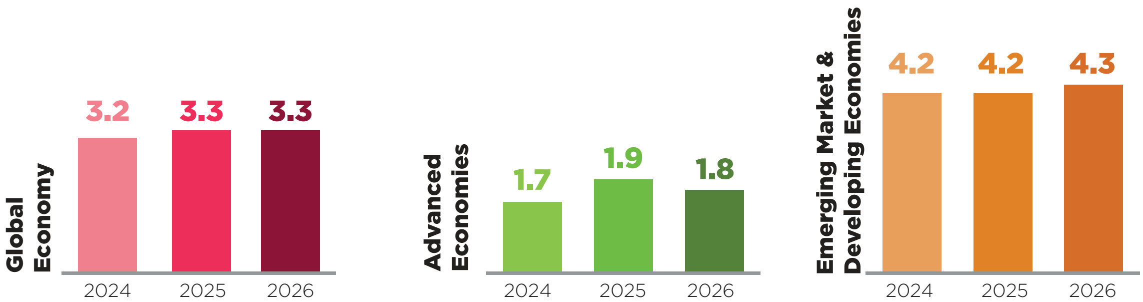

Figure 1.1 IMF's projections for global economic growth (%)


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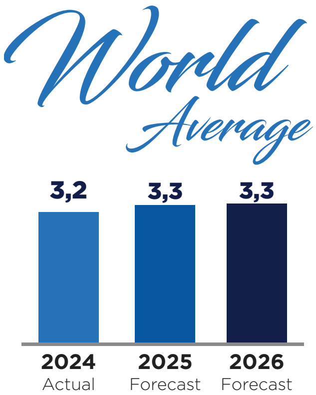
In 2024, the average growth rate in developed countries was 1.7%, and it is expected to reach 1.9% in 2025 and 1.8% in 2026. In contrast, the average economic growth rate in developing countries, including Türkiye, was 4.2% in 2024 and is projected to remain at 4.2% in 2025 and rise to 4.3% in 2026.

Development figures and development projections on the basis of regions and some important countries can be seen in **Table 1.1**.

Table 1.1 IMF's Global Growth Forecasts for 2024-2026 (%)[2]



	Actual	Forecast	
	2024	**2025**	**2026**
Developed Countries	1,7	1,9	1,8
USA	2,8	2,8	1,1
Euro Area	0,8	1,0	1,4
Germany	-0,2	0,3	1,1
France	1,1	0,8	1,1
Italy	0,6	0,7	0,9
Spain	3,1	2,3	1,8
Japan	-0,2	1,1	0,8
United Kingdom	0,9	1,6	1,5
Canada	1,3	2,0	2,0
Other Developed Countries	2,0	2,1	2,3
Developing Countries	4,2	4,2	4,3
Developing Asia	5,2	5,1	5,1
China	4,8	4,6	4,5
India	6,5	6,5	6,5
Developing Europe	3,2	2,2	2,4
Russia	3,8	1,4	1,2
Türkiye	3,0	2,6	3,6
Latin America and the Caribbean	2,4	2,5	2,7
Brazil	3,7	2,2	2,2
Mexico	1,8	1,4	2,0
Middle East and Central Asia	2,4	3,6	3,9
Saudi Arabia	1,4	3,3	3,0
Sub-Saharan Africa	3,8	4,2	4,2
Nigeria	3,1	3,2	3,0
South Africa	0,8	1,5	1,6

However, a country-by-country analysis reveals outlooks that differ from global averages. For instance, growth forecast revisions among advanced economies vary in direction. In the United States, capital strength remains evident, with core demand staying robust due to a relatively accommodative monetary policy stance and favourable financial conditions. Growth in the United States is forecast to reach 2.7% in 2025. This rate partly reflects carryover momentum from 2024, as well as underlying strengths such as a strong labour market and accelerating investment. In 2026, growth is expected to moderate to its potential level of 1.1%.

In the Euro Area—which holds critical importance for Türkiye—growth is expected to rebound in 2025, despite ongoing geopolitical tensions that continue to weigh on the region. Key sources of uncertainty include the underperformance of the manufacturing sector and political instability following recent elections. By 2026, growth is projected to reach 1.4%, driven by stronger domestic demand as financial conditions ease, confidence improves, and uncertainty gradually recedes.

The growth performance of emerging market and developing economies in 2025 and 2026 is expected to remain broadly in line with 2024 levels. According to projections made at the end of

[2] IMF

2025, China's growth for the year was 4.6%. In India—another key manufacturing economy—growth is projected to reach 6.5% in both 2025 and 2026, consistent with the country's potential.

Growth in the Middle East and Central Asia is projected to increase in 2025. In Latin America and the Caribbean, it is expected to accelerate slightly to 2.5%. Growth in Sub-Saharan Africa is also forecast to pick up, while emerging and developing Europe—primarily Eastern European countries—is projected to experience a slowdown.

Risks to Growth in the Near Future

At this point, many expectations can be mentioned. The risk of the re-emergence of inflationary pressures may prompt central banks to raise policy rates and intensify monetary policy divergence. Higher interest rates could exacerbate fiscal, financial and external risks. A stronger US dollar resulting from interest rate differentials and tariffs, among other factors, could alter capital flow patterns and global imbalances and complicate macroeconomic data.

In addition to the risks arising from economic policy changes, geopolitical tensions may intensify, leading to new increases in commodity prices. Conflicts in the Middle East and Ukraine could worsen and directly affect trade routes as well as food and energy prices. Commodity-importing countries may be particularly affected and the stagflation effect of high commodity prices may be exacerbated by the appreciating dollar.

On the other hand, there could be a jump in global economic activity if incoming governments, especially in countries critical to the world economy, renegotiate existing trade agreements and conclude new ones. This could reduce uncertainty faster and be much less disruptive to growth and inflation. Such co-operative outcomes could also boost confidence and support investment and medium-term growth prospects.

In the next section, expectations, projections and trends in global trade for the near future will be analysed.

1.1.2. Expectations, Projections and Trends in Global Trade

Global trade data for 2024 have been on an upward trend since the second half of 2023. Over the last four quarters, trade growth in emerging economies has generally outpaced trade growth in advanced economies. However, this trend reversed in Q3 2024 and trade growth was largely driven by favourable trade dynamics in advanced economies. In contrast, development in East Asia stalled and some of the largest emerging Asian economies showed negative data. Overall, trade in services significantly outpaced the growth rate of trade in goods in 2024, but this was partly due to price inflation of services. Both trade in goods and trade in services showed positive quarter-on-quarter growth worldwide in Q3 2024.

Looking ahead to 2025, moderate global inflation, stable economic growth forecasts and improving trade activity point to continued positive momentum in global trade in early 2025. However, this trend is expected to face significant challenges. Recent changes in the trade policy of the United States and the increased use of industrial policies in many countries may have a negative impact on global trade growth. In addition, the renewed and expanding threat of trade wars and ongoing geopolitical tensions create uncertainty over the outlook for global trade in 2025.

Volume of global trade: USD 33 trillion

According to UNCTAD data, global trade in 2024 increased by approximately 1 trillion dollars compared to the previous year and set a new record with 33 trillion dollars. This increase in the total trade in goods and services is largely due to the 7% increase in trade in services. Trade in services, including transport services, contributed $500 billion to global expansion in 2024. Trade in goods grew at a slower rate of 2% in 2024, below its peak in 2022. The development in trade in services and goods can be seen proportionally in **Figure 1.2**.

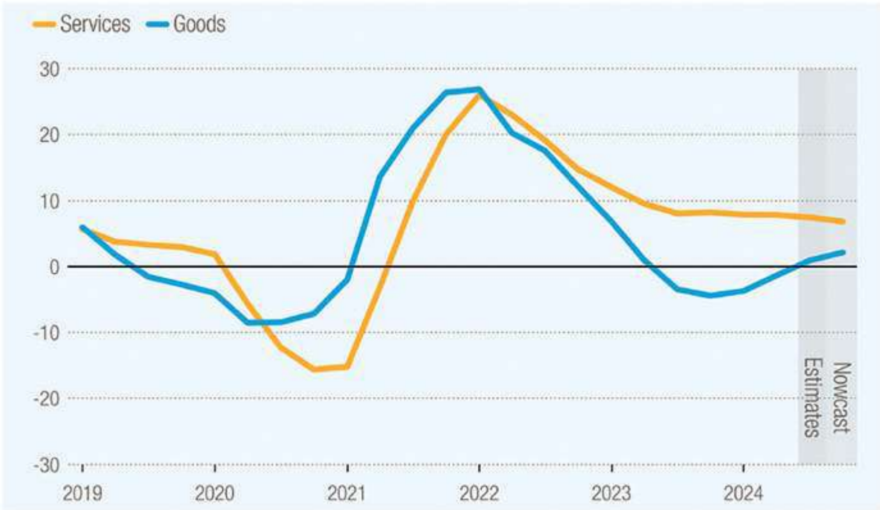


Figure 1.2 Development rates in trade in goods and services by years[3]

Tradable goods prices increased slightly in the third quarter of 2024, but remained relatively stable in the fourth quarter. Overall, tradable goods prices are projected to remain unchanged on an annual basis (**Figure 1.3**).

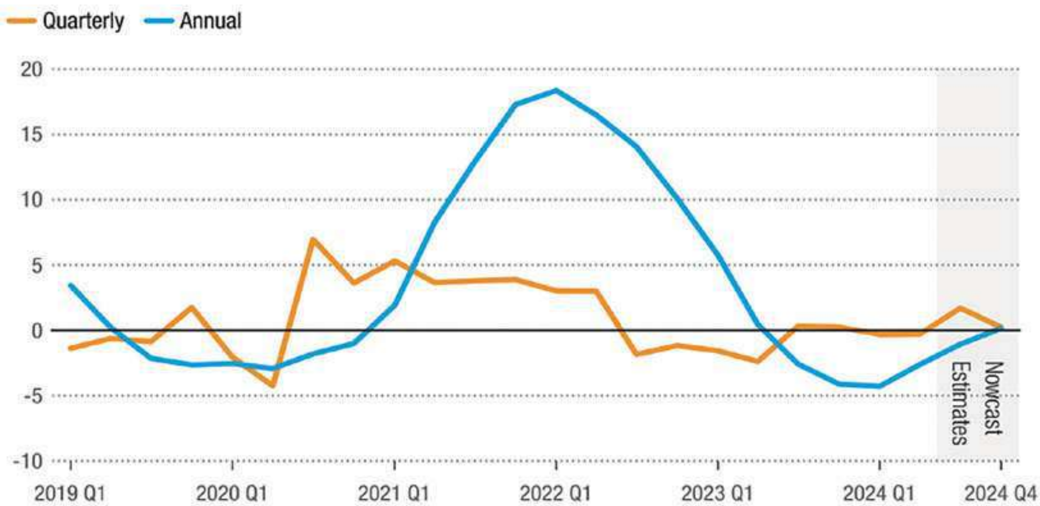


Figure 1.3 Annual and quarterly growth in the total price of traded goods

[3]UNCTAD

Figure 1.4 can be analysed with regard to price changes especially for critical commodities. There have been significant changes in the prices of energy, one of the most important commodities. Following the outbreak of the war in Ukraine, energy prices fell from their peak in 2022 as economies adapted to changing supply conditions. The average price of natural gas in the United States has returned to levels last seen before the COVID-19 pandemic and the war in Ukraine. However, prices in Europe and Japan remain significantly higher than in the US. In particular, European natural gas prices are approaching Japanese Liquefied Natural Gas (LNG) prices as Europe shifts its natural gas supply from Russia to US LNG (**Figure 1.4**).

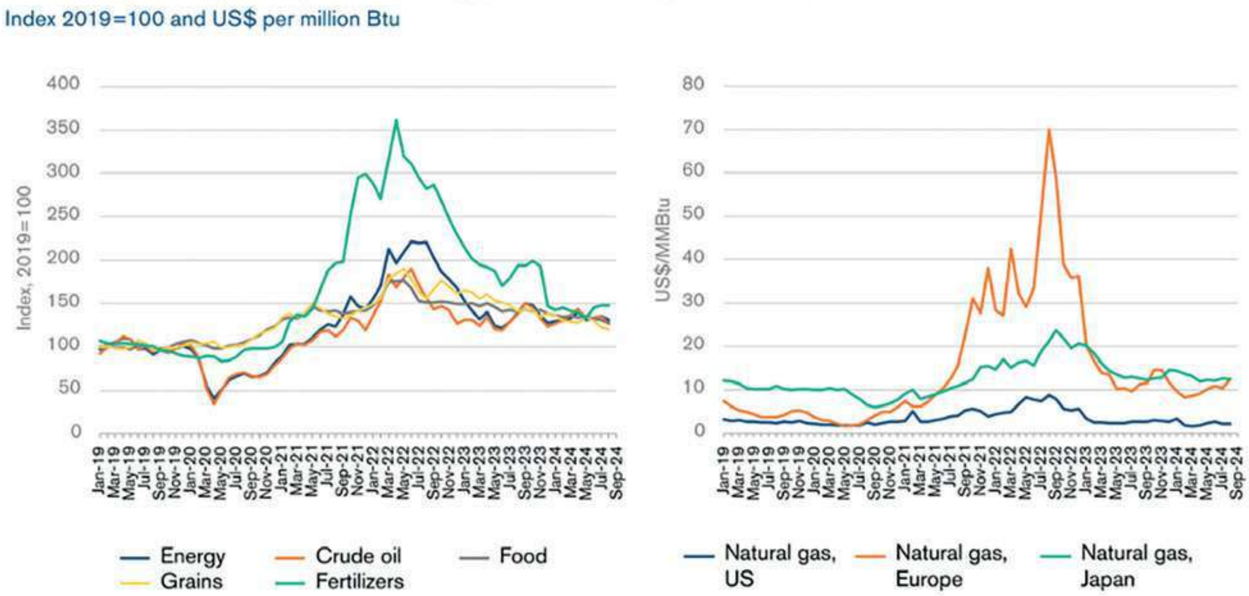


Figure 1.4 Global primary commodity prices, January 2019-August 2024[4]

Changes in global trade dynamics

Geoeconomic issues continue to play an important role in shaping key bilateral trade trends. These factors not only affect trade between major economies, but can also influence trade dynamics with other trading partners. Another important factor affecting bilateral trade is the continued reshaping of "value chains". As noted in the 2024 TURKLIM Port Sector Report, since the second half of 2022 there has been there has been a significant shift towards more politically aligned trade relations. These shifts indicate that bilateral trade increasingly favours countries with similar geopolitical positions, a trend often referred to as "friend-shoring". This trend, which can be defined as the tendency to strengthen trade partnerships with politically compatible countries, started to stabilise in the second half of 2023, and at the same time, global trade became more concentrated around major trading partners. However, the "friend shoring" trend slowed down in 2024. For example, Russia's trade dependence on China declined from around 10% in 2023 to 3.7% in 2024. This indicates that the consequences of the trade tensions between Ukraine and Russia are tending toward normalization.

Figure 1.5 shows the increase in the "friend shoring" trend as of the first quarter of 2022 and the decrease in this trend as of the first quarter of 2024. On the other hand, "near shoring", which refers to a country's trade with its close neighbours, continued to decline. This again, as illustrated in the figure, shows that the decline in what is referred to as 'trade concentration' is ongoing. In this sense, countries have tended to prefer countries with which they have mutual commercial benefits rather than their geographic neighbours or politically friendly nations.

[4]World Bank

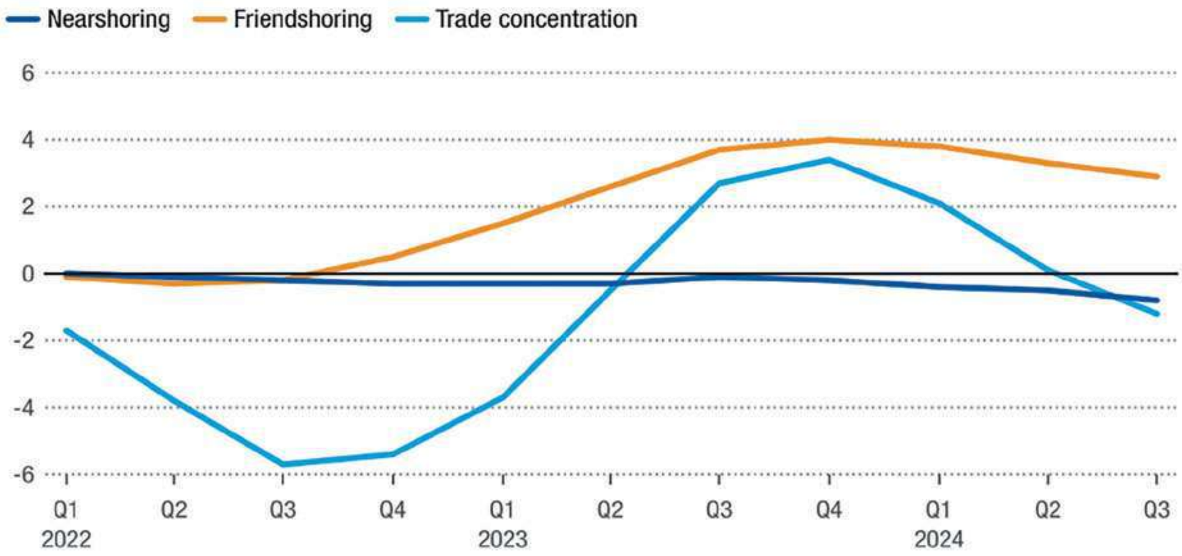


Figure 1.5 The changing face of global trade

Trade development by country

The World Trade Organization (WTO) is the most authoritative institution on global trade. The data and projections on trade in this report are structured according to WTO sources. According to WTO data, world trade will increase by 2.7% in 2025 compared to 2024. This rate of increase is 0.1 percentage points above expectations.

Asia's exports grew faster than any other region, reaching 7.4% in 2024. Asia was followed by the Middle East (4.7%), South America (4.6%), CIS[5] region (4.5%), Africa (2.5%), North America (2.1%) and Europe (-1.4%). On the import side, the fastest growing region was the Middle East (9.0%), followed by South America (5.6%), Asia (4.3%), North America (3.3%), CIS region (1.1%), Africa (1.0%) and Europe (-2.3%).

[5]The Commonwealth of Independent States is a community of states established by the treaty signed between Russia, Ukraine and Belarus on 8 December 1991.

In 2025 and 2026, world GDP growth is expected to remain stable, while world trade growth is expected to increase slightly to 3.0% due to the delayed positive contribution of the EU to global trade. Asia is projected to lead other regions in global export growth (4.7%) and import growth (5.1%). Trade flows in all regions are expected to increase in volume terms in 2025, except for a small decline in South American exports (-0.1%) and a larger decline in Middle Eastern imports (-1.1%).

After growing by 4.6% in 2023, exports of goods from less developed countries slowed to 1.8% in 2024. Export growth is expected to recover to 3.7% in 2025.

Figure 1.6 shows quarterly merchandise export and import volume developments by region until the second quarter of 2025. Exports from Asia increased after the COVID-19 pandemic, but stagnated in the following period.

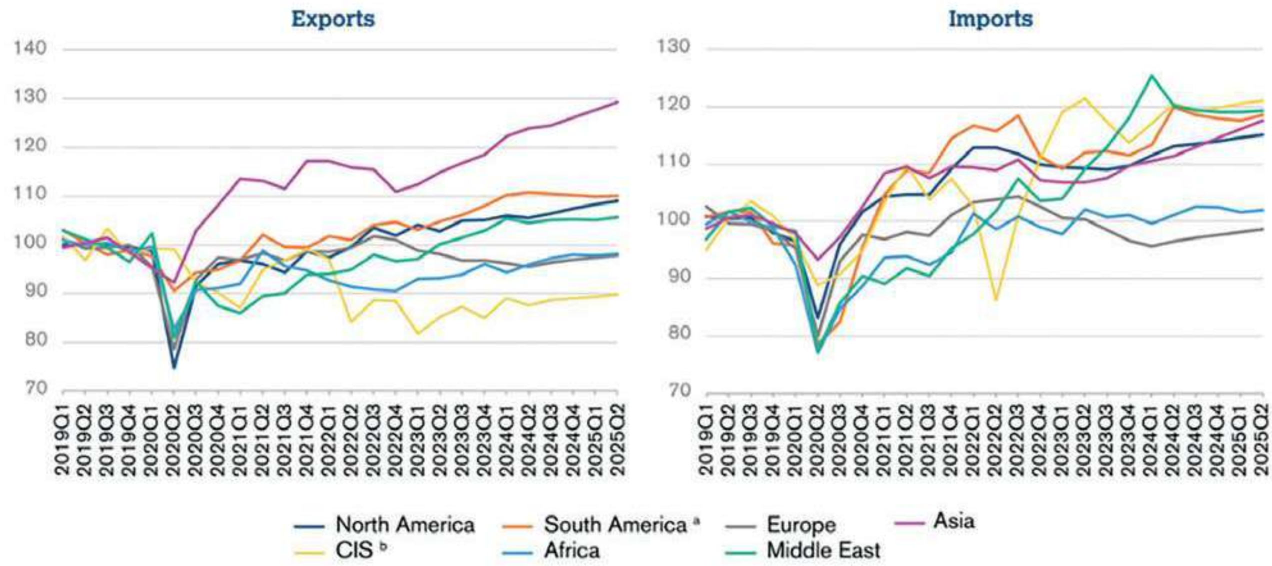


Figure 1.6 Exports and imports of goods by regions[6]

If the forecasts are realised, by the second quarter of 2025, Asia's exports will have increased by 29.4% compared to their average level in 2019, followed by South America, North America and the Middle East with export increases of 10.1%, 9.1% and 5.7%, respectively. Exports to Africa are expected to decline by 1.8%, while exports to Europe are projected to fall by 2.1%. Meanwhile, exports from CIS countries are expected to decline by 10.1% in the same period.

In terms of import growth, the CIS region is expected to see the largest increase between 2019 and mid-2025, with import growth of 21.0%, followed by the Middle East at 19.3% and South America at 18.5%. Asia's imports are forecast to increase by 17.6%, while North America will see a 15.1% increase. Africa's imports are expected to increase by only 2.0% in the same period, while Europe's imports are expected to decline by 1.4%.

The country and group country data mentioned so far can be seen together in **Table 1.2**.

[6]WTO

Table 1.2 Annual proportional change in world merchandise trade volume (2019-2024)[7]

		2020	2021	2022	2023	2024	2025
Export	North America	-9,2	6,4	3,9	3,7	2,1	2,9
	South America	-5,0	6,7	3,0	2,3	4,6	-0,1
	Europe	-8,5	6,9	1,8	-2,6	-1,4	1,8
	CIS	-1,1	-0,8	-1,9	-4,5	4,5	1,7
	Africa	-7,2	3,8	-2,5	4,3	2,5	2,2
	Middle East	-6,4	-0,2	3,8	1,1	4,7	1,0
	Asia	0,6	13,1	0,2	0,3	7,4	4,7
Import	North America	-5,2	11,9	5,7	-2,0	3,3	2,0
	South America	-9,9	24,9	4,1	-4,5	5,6	1,7
	Europe	-8,2	7,5	4,4	5,0	-2,3	2,2
	CIS	-5,2	9,4	-5,7	17,9	1,1	1,7
	Africa	-13,6	5,8	6,5	0,1	1,0	1,1
	Middle East	-8,7	12,9	10,5	8,5	9,0	-1,1
	Asia	-1,0	10,3	-1,0	-0,7	4,3	5,1

According to **Table 1.2**, growth forecasts for advanced economies have increased moderately, while growth in emerging economies continues to be stronger.

Global trade trends at sectoral level

Trade growth has varied considerably across sectors in the last four quarters. This diversity was particularly evident in information and communication technology sectors, such as communications and office equipment, and in apparel. On the other hand, the value of global trade declined in sectors such as road vehicles, textiles, metals and energy. On an annual basis, global trade remains negative in many sectors, including apparel, chemicals, energy, metals and other manufacturing industries. This heterogeneity highlights the uneven recovery and changing dynamics in global trade. Clearly, some sectors continue to lag while others are growing.

Global trade trends are analysed separately in goods and services groups.

[7]UNCTAD

Global Trade in Goods

Trade in goods continues its positive trend, with annual growth in value terms increasing from -8% in Q3 2023 to +2% in Q2 2024. This change is partly due to the waning impact of the increase in global commodity prices following the outbreak of war in Ukraine in 2022. According to World Bank statistics, global commodity prices fell by an annual average of 1% in the first half of 2024, after falling by 23% in the second half of 2023.

The impact of exchange rates on US dollar-denominated trade flows was limited in the first half of 2024. According to Bank for International Settlements (BIS) statistics, the dollar appreciated by 2.2% in this period, after depreciating by 1.1% in the previous six months, and its value remained almost unchanged for 12 months. The overall appreciation of the US dollar tends to reduce the value of world trade measured in dollars.

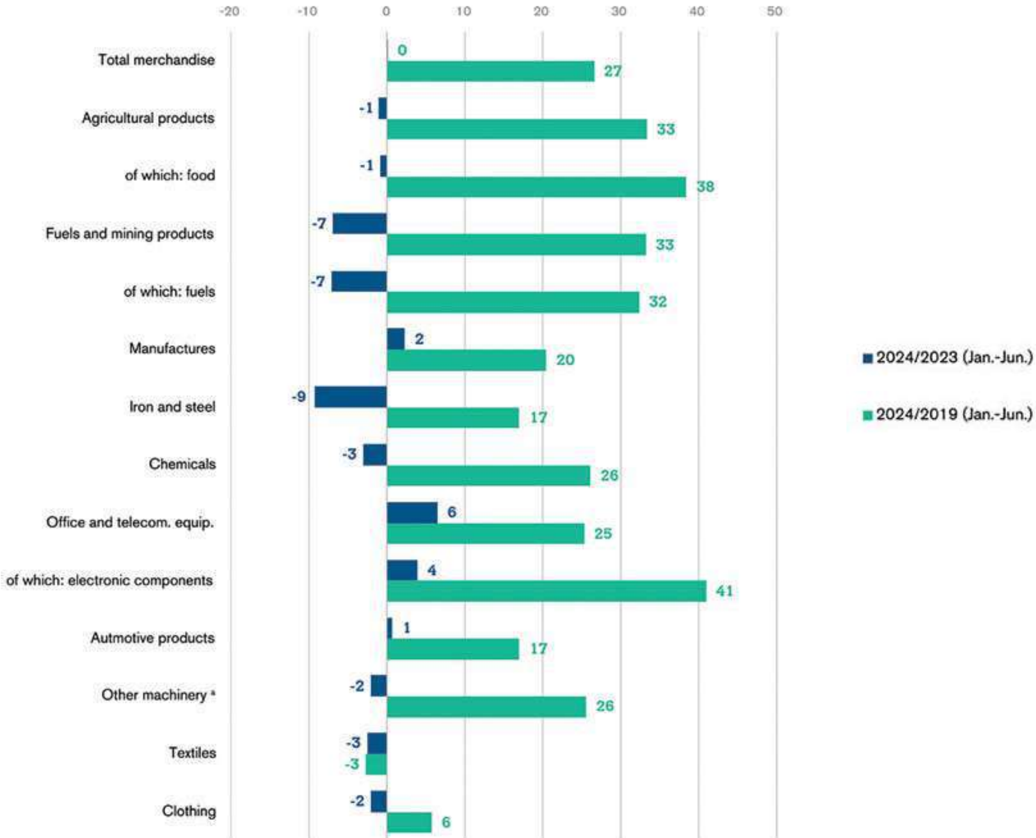


Figure 1.7 Annual goods trade growth rates by product, (January-June)[8]

In the first half of 2024, trade in agricultural products decreased by 1% compared to the same period of the previous year. Over the same period, trade in manufactured goods increased by 2%, while trade in fuels and mining products fell by 7% . Most categories of manufactured goods recorded small year-on-year decreases, the main exceptions being iron and steel (-9%) and office and communication (telecoms) equipment (+6%).

The insignificant change in aggregate trade in goods in the first half of 2024 masks larger changes in individual economies. While some economies in Asia recorded large increases in both exports and imports, others in South America and Europe recorded declines, especially on the import side. For example, Vietnam's exports and imports increased by 16% and 18% respectively compared to the first half of 2023. Singapore's exports and imports increased by 6% and 9%, respectively.

[8]WTO

The United States and China recorded moderate increases in the value of exports (by 2% and 4% respectively) and imports (by 3% each). The main European economies recorded small declines in exports and larger contractions in imports. For example, Germany's exports fell by 2%, while imports fell by 6%. Similarly, France's exports fell by 3% while imports fell by 7%. On the export side, Bolivia recorded the largest contraction, down by 21%. Meanwhile, Argentina's imports fell by 26% as its economy remained in crisis.

Trade in Services

World trade in services increased by an annual average of 8% in the first quarter of 2024, rising steadily over the last four quarters. Growth was driven in particular by the "other business services" category, which includes many digitally deliverable sectors such as professional and business services, financial services and information and communication technology services.

In the first quarter of 2024, services exports grew by 9% in both North America and Asia, while Europe recorded an increase of 8%. On the import side, Asia led the other regions with 9% growth, followed by North America and Europe, each recording 6% growth.

International travel continued to recover, up 19% y-o-y, with growth stabilising after the post-pandemic volatility, as evidenced by declining year-on-year growth rates. Freight rates increased in 2024 due to the disruptions caused by the attacks in the Red Sea on key trade routes. At the end of September, the global spot price of a 40-foot container quadrupled from its level at the end of 2023, reaching approximately USD 4,500. The transport sector has experienced considerable volatility in recent years.

Figure 1.8 shows the annual growth in commercial trade in services by main sectors for selected economies in the first half of 2024. Most of the leading services trading countries experienced growth in both exports and imports over this period, with the exception of France, where services imports fell by 2%, and Germany, where export growth slowed to 1%.

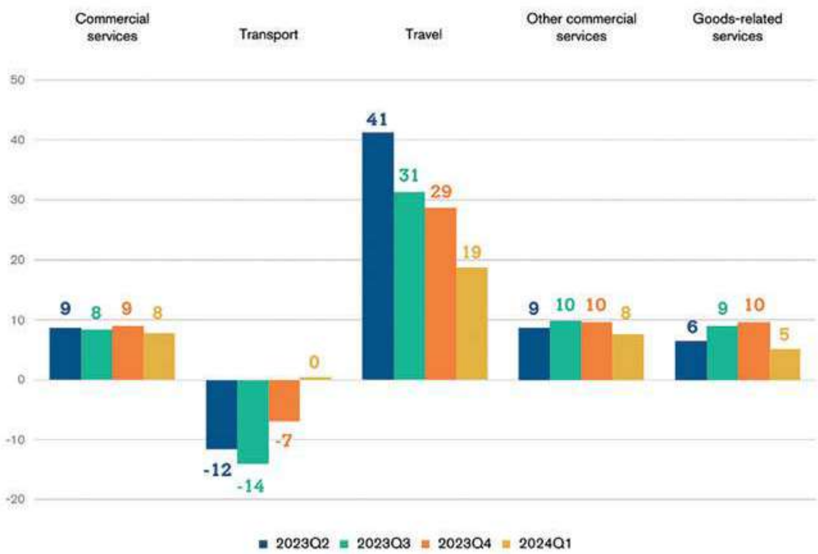


Figure 1.8 Growth in world trade in commercial services, 2023Q2-2024Q1[9]

In the United States, services exports increased by 8%, with travel exports growing by 17% and transport by 8%, marking the strongest gains. In the United Kingdom, imports of services increased by 14%, driven by other business services. Exports of financial services, which account for around 20% of the country's exports, increased by 13%.

[9]WTO-UNCTAD

Ireland recorded the highest export growth among leading services exporters. Services exports increased by 25% year-on-year, driven by a 20% rise in software services, which account for more than half of Ireland's services exports. Growth was also supported by a 71% increase in other business services, particularly research and development (R&D) services, and a 24% rise in financial services exports.

China's services exports increased by 8% in the first half of 2024. This was led by travel, which rose 126% as visa relaxation policies led to a sharp increase in international tourist arrivals (up 152%). Exports in the transport sector returned to growth, rising by 10% year-on-year after a sharp 40% year-on-year decline in 2023. Sharp falls in exports of insurance and pension services (down 70%) and financial services (down 14%) limited growth in other business services.

Figure 1.9 shows the major branches of business in the service sector and the changes in these branches in major countries.

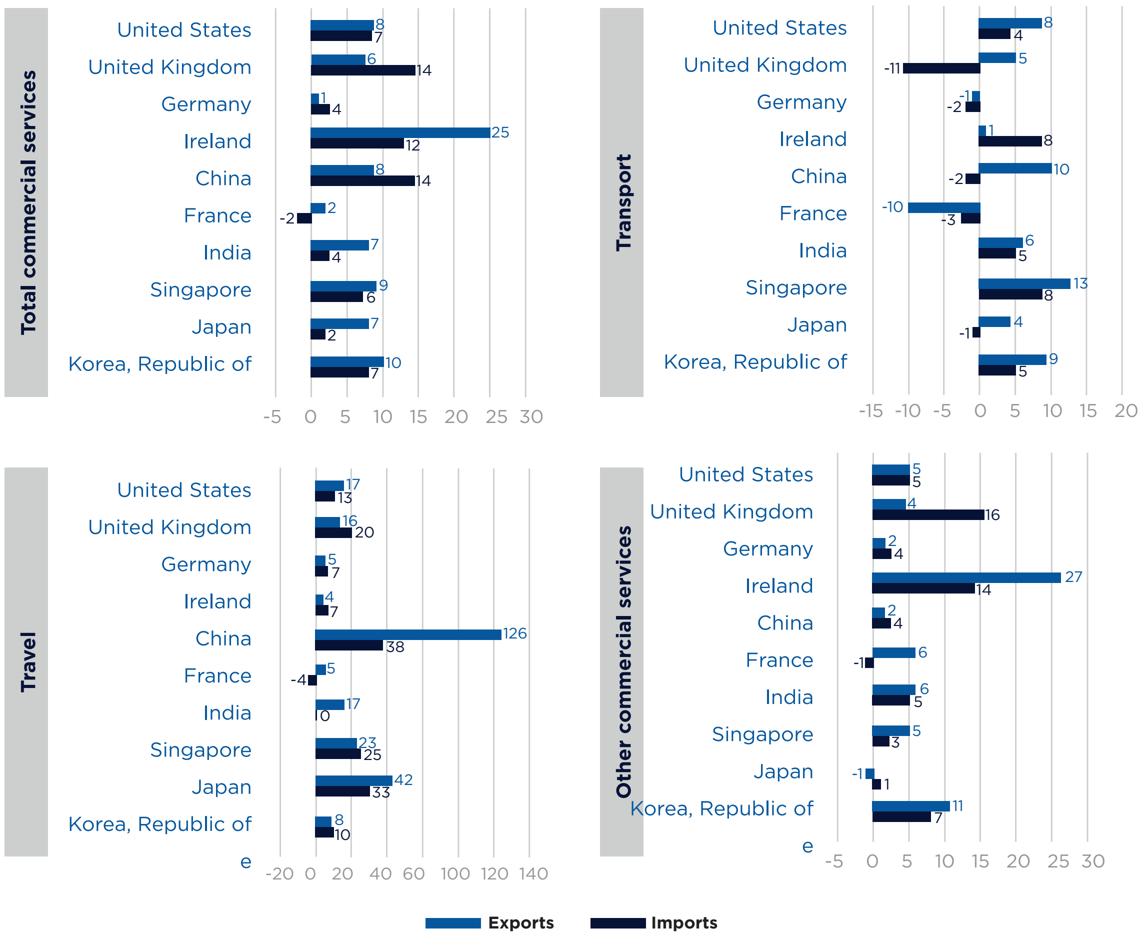


Figure 1.9 Development in key countries and sectors in commercial services trade[10]

Risks for the near term

Numerous variables are taken into account when forecasting global trade, and many of them have recently tilted to the downside. These risks include the expansion of regional conflicts, monetary policy divergence leading to financial volatility and the fragmentation of supply chains linked to geopolitical concerns. There is also limited upside potential if interest rate cuts in advanced economies have a positive impact.

[10]WTO-UNCTAD

ADANA PORT

Adana's Gateway to the World

Adana Port is a multi-purpose port operator providing services for containers, general cargo, bulk cargo, and project cargo. With a terminal area of **1,300,000** m², specially designed warehouses and silos, it offers logistics solutions for future growth and investments.

STRATEGIC LOCATION

In the Gölovası area of Yumurtalık district in Adana, Adana Port serves the vast hinterland of the Eastern Mediterranean, Southeastern Anatolia, and Central Anatolia. Additionally, as a critical hub for transit cargo transportation with neighboring countries, it plays a strategic role in regional and international trade.

The escalation of conflicts in the Middle East could have negative consequences for global and regional trade flows, particularly for countries directly involved. The effects would also be felt in other regions, including further disruption to maritime transport and increased energy prices due to higher risk premiums. The devastating impact of the Red Sea crisis has so far been contained, but in a wider conflict other routes could also be affected. Given the region's important role in oil production, the risk of energy supply disruptions will also increase. Higher energy prices would reduce economic growth in importing economies and indirectly put pressure on trade.

Some of the factors that make the global trade outlook for 2025 highly uncertain are as follows:

Changes in the United States' trade policy stance

With the new administration, it has become clear that the United States is adopting a more protectionist trade policy. In this context, in addition to existing quotas, new tariffs may extend beyond specific products and be applied more broadly. Moreover, tariffs could affect not only geopolitical rivals, but also key trading partners, especially those with high tariffs and significant trade surpluses with the United States. Given the role of the United States as a major consumer market and the interconnectedness of cross-border value chains, even modest changes in United States tariffs would have significant impacts on global trade dynamics. Indeed, the effects of these changes began to emerge in February 2025.

Ripple effects of trade restrictions

Unilateral and highly restrictive trade policies often lead to retaliatory actions, creating a cycle of escalating trade barriers that can involve third parties. Moreover, tariffs imposed on specific segments of global value chains often have a ripple effect, affecting the entire value chain. The mere threat of tariffs without actual tariff increases and the possibility of retaliatory actions in response encourages a less predictable global trading environment. This can have a negative impact not only on international trade, but also on investment and overall economic growth.

Increase in subsidies and trade restrictive measures

The prioritisation of national concerns and the urgency of meeting climate commitments will continue to shape changes in both industrial and trade policies until the end of 2025. An increase in trade-restrictive measures, as well as industrial policies to favour the production of sustainable and environmentally friendly products, could negatively affect the growth of international trade, especially in strategic sectors.

The impact of the US dollar on global trade

The value of the dollar is crucial for global trade, as most commodities and international transactions are priced in US dollars. Geopolitical tensions and US policy changes could potentially lead to an appreciation of the US dollar. However, possible interest rate cuts in 2025 could also weaken the dollar. As a result, uncertainty about the strength of the dollar creates uncertainty in global trade.

Lower transport costs

In the second half of 2024, there has been a reduction in demand for container freight, as reflected by the significant decline in the Shanghai Container Freight Rate Index. While these indices point to lower transport costs, they also indicate lower global demand for both intermediate inputs and processed goods.

Economic and commercial developments in the world have been analysed so far. The next section provides an overview of Türkiye's current trade and economic outlook.

1.2. Developments and Expectations in Turkish Economy and Trade

According to TURKSTAT, annual GDP based on the sum of four quarters (production method) increased by 3.2% in 2024 year-on-year (**Table 1.3**). According to the production method, GDP at current prices increased by 63.5% in 2024 compared to the previous year and reached 43 trillion TL. GDP per capita was calculated as 507 thousand TL at current prices and and USD 15,463 in dollar terms.

When the activities that make up the GDP are analysed; as a chained volume index in 2024 compared to the previous year; construction sector total value added increased by 9.3%, taxes on products minus subsidies by 7.7%, financial and insurance activities by 4.9%, agriculture by 3.9%, information and communication activities by 3.4%, services by 3.4%, real estate activities by 2.4%, public administration, education, human health and social work activities by 1.8%, professional, administrative and support service activities by 1.4%, other service activities by 1.2% and industry by 0.5%. Quarterly and annual totals of GDP can be seen in **Table 1.3**[11].

Table 1.3 Türkiye's GDP Development (at current prices)[12]

Year	Quarter	GDP		Change (%)
		Million TL	Million $	
2022	I	2.519.789	181.490	7,8
	II	3.424.670	219.665	7,6
	III	4.273.136	242.416	4,1
	IV	4.794179	262.243	3,3
	Annual	**15.011.776**	**905.814**	**5,5**
2023	I	4.642.146	246.013	4,0
	II	5.506.173	271669	3,9
	III	7.696.613	296.508	6,1
	IV	8.431.375	304.402	4,0
	Annual	**26.276.307**	**1.118.593**	**4,5**
2024	I	8.870.040	287.127	5,4
	II	9.920.835	307.235	2,4
	III	11.915.589	358.678	2,2
	IV	12.704.050	369.368	3,0
	Annual	**43.410.514**	**1.322.408**	**3,2**

Türkiye's foreign trade

Türkiye's foreign trade remained nearly flat in 2024, decreasing slightly by 0.1% compared to the previous year, in parallel with GDP developments. Exports increased by 2.4% to 262 billion USD, while imports declined by 5% to 344 billion USD. Since the overall volume of imports and exports did not change significantly, Türkiye's total foreign trade volume for 2024 stood at 605 billion USD (**Table 1.4**).

Table 1.4 Foreign Trade Data Realised Between 2015-2024 (Million $)[13]

	Export		Imports		Volume		Foreign Trade Balance	Export/ Import(%)
	Value	Change (%)	Value	Change (%)	Value	Change (%)		
2015	150.982	-9,3	213.619	-14,9	364.601	-12,7	-62.637	70,7
2016	149.247	-1,1	202.189	-5,4	351.436	-3,6	-52.942	73,8
2017	164.495	10,2	238.715	18,1	403.210	14,7	-74.221	68,9
2018	177.169	7,7	231.152	-3,2	408.321	1,3	-53.984	76,6
2019	180.833	2,1	210.345	-9,0	391.178	-4,2	-29.512	86,0
2020	169.637	-6,2	219.516	4,4	389.154	-0,5	-49.840	77,3
2021	225.214	32,8	271.425	23,6	496.640	27,6	-46.133	83,0
2022	254.169	12,9	363.710	34,0	617.880	24,4	-109.540	69,9
2023	255.627	0,6	361.967	-0,5	617.594	-0,05	-106.339	70,6
2024	261.855	2,4	344.020	-5,0	605.874	-0,02	-82.165	76,1

[11] http://www.tuik.gov.tr/
[12] http://www.tuik.gov.tr/
[13] http://www.tuik.gov.tr/

In 2024, there were some changes among the top three countries with which Türkiye engages in foreign trade. Iraq, previously one of the top three export destinations, was replaced by the United Kingdom, due to a significant 23% increase in exports to that country. As a result, the top three export destinations became Germany, the United States, and the United Kingdom. On the import side, Russia, the top source of imports in 2023, dropped one position, with China taking the lead. Therefore, the top import partners in 2024 were China, Russia, and Germany.

The top 20 export destinations accounted for 65% of total exports, with the value of exports to these countries increasing by 4.8% in 2024. On the other hand, imports from the top 20 countries, which represented 73% of total imports, decreased by 3.9%, in line with the overall decline in imports. While imports from each of the top three import partners declined, imports from Italy, which ranked fourth, rose significantly by 29%.

In 2024, our foreign trade deficit was 82 billion dollars, with China, Russia, Switzerland and South Korea being the countries with the highest foreign trade deficit. Our foreign trade deficit with China and Russia alone is 41 and 35 billion dollars, respectively. A more balanced trade with these countries may help us to close our foreign trade deficit and even generate an export surplus (**Table 1.5**).

Table 1.5 20 Countries with the Most Foreign Trade (*000 $)[14]

Country Name	Export		
	2023	2024	23/24
Germany	21.083.354	20.434.489	-3,1%
USA	14.879.654	16.348.730	9,9%
United K.	12.463.116	15.289.050	22,7%
Iraq	12.759.358	13.034.364	2,2%
Italy	12.372.779	12.933.251	4,5%
France	10.287.542	10.041.842	-2,4%
Spain	9.783.655	9.799.668	0,2%
Netherlands	7.857.412	8.568.416	9,0%
Russian Fed.	10.906.585	8.564.965	-21,5%
UAE	8.572.809	8.294.698	-3,2%
Romania	6.951.714	7.800.302	12,2%
Poland	5.955.208	6.263.528	5,2%
Bulgaria	4.226.695	5.153.348	21,9%
Greece	4.171.507	4.817.750	15,5%
Belgium	4.365.608	4.364.594	0,0%
Egypt	3.352.651	4.176.753	24,6%
Saudi A.	2.621.416	3.985.654	52,0%
Ukraine	3.443.800	3.539.090	2,8%
Morocco	3.060.347	3.442.707	12,5%
China	3.306.084	3.395.162	2,7%
Top 20 Top.	**162.421.294**	**170.248.360**	**4,8%**
Türkiye	**255.627.429**	**261.854.678**	**2,4%**
Top 20 Shares	**63,54%**	**65,02%**	**2,3%**

Country Name	Imports		
	2023	2024	23/24
China	45.047.968	44.930.730	-0,3%
Russian Fed.	45.599.587	44.019.837	-3,5%
Germany	28.687.775	27.084.193	-5,6%
Italy	14.994.186	19.312.494	28,8%
USA	15.779.725	16.227.350	2,8%
France	11.547.686	12.499.836	8,2%
Switzerland	19.905.177	11.173.798	-43,9%
Spain	9.507.243	9.362.320	-1,5%
S. Korea	9.487.978	9.245.617	-2,6%
UAE	11.530.205	7.363.388	-36,1%
India	7.932.008	7.021.234	-11,5%
United K.	6.523.078	6.845.524	4,9%
Poland	5.074.133	5.574.906	9,9%
Netherlands	4.420.492	5.020.743	13,6%
Japan	5.466.847	4.737.259	-13,3%
Malaysia	4.139.184	4.668.917	12,8%
Egypt	3.647.448	4.410.583	20,9%
Romania	3.685.521	3.985.122	8,1%
Belgium	4.302.475	3.874.695	-9,9%
Brazil	4.139.999	3.864.457	-6,7%
Top 20 Top.	**261.418.717**	**251.223.002**	-3,9%
Türkiye	**361.966.913**	**344.019.959**	-5,0%
Top 20 Shares	**72,22%**	**73,03%**	**1,1%**

In 2023, the devastating earthquake directly affected the provinces with the highest foreign trade. In 2024, these provinces (especially Gaziantep) continued to decline. Istanbul is one of the provinces that ranked in the top 10 in our foreign trade. In 2023, the top 10 provinces with the highest foreign trade accounted for 83% of our total exports and 81% of our total imports . Considering our foreign trade by all modes of transport, it is noteworthy that, unlike previous years, Ankara surpassed Kocaeli in the top 3 (both in exports and imports). With this change, the top three provinces with

[14] http://www.tuik.gov.tr/

the highest exports were Istanbul, Izmir and Ankara, while the top three provinces with the highest imports were Istanbul, Ankara and Kocaeli (**Table 1.6**).

Table 1.6 Our Provinces in the Top 10 in Our Foreign Trade (*000, $)[15]

Provinces	Export		
	2023	2024	23/24
Istanbul	127.221.911	125.911.931	-1,0%
Izmir	17.180.819	16.890.211	-1,7%
Ankara	12.824.825	14.976.135	16,8%
Kocaeli	13.051.340	13.198.752	1,1%
Bursa	12.710.130	12.358.368	-2,8%
Gaziantep	10.490.403	10.310.303	-1,7%
Mersin	7.700.709	8.282.943	7,6%
Sakarya	6.102.853	6.592.888	8,0%
Denizli	4.169.483	4.421.241	6,0%
Hatay	2.905.329	3.814.477	31,3%
Top 10	**214.357.801**	**216.757.247**	**1,1%**
Türkiye	**255.627.429**	**261.854.678**	**2,4%**
Top 10 Shares	**83,86%**	**82,78%**	**-1,3%**

Provinces	Imports		
	2023	2024	23/24
Istanbul	203.489.153	194.388.288	-4,5%
Izmir	17.262.638	17.221.909	-0,2%
Ankara	18.061.414	16.302.926	-9,7%
Kocaeli	12.935.890	12.523.919	-3,2%
Bursa	10.624.838	9.583.626	-9,8%
Gaziantep	7.819.935	8.081.685	3,3%
Mersin	7.085.508	6.815.060	-3,8%
Sakarya	5.335.813	6.547.965	22,7%
Denizli	3.950.370	4.333.085	9,7%
Hatay	3.502.579	3.536.494	1,0%
Top 10	**290.068.137**	**279.334.957**	**-3,7%**
Türkiye	**361.966.913**	**344.019.959**	**-5,0%**
Top 10 Shares	**80,14%**	**81,20%**	**1,3%**

When the top 10 chapters in foreign trade are analysed; it is seen that motor vehicles were the top exports in 2024 with a 5% increase rate and a volume of 32.4 billion dollars, followed by boilers and machinery with 26 billion dollars, and mineral fuels and mineral oils with 17 billion dollars in third place. In the same year, the top 3 most traded chapters in imports were mineral fuels (65.6 billion dollars with a decrease of 5%), boilers and machinery (41 billion dollars with a decrease of 3.4%) and motor vehicles 32 billion dollars with a decrease of 1.8%) (**Table 1.7**).

Table 1.7 Top 10 Chapters in Our Foreign Trade (*000, $)[16]

Product Chapters	Export		
	2023	2024	23/24
Motorised land vehicles etc.	30.829.182	32.442.605	5,2%
Boilers, machines, mechanical devices, etc.	25.262.262	25.556.088	1,2%
Mineral fuels, mineral oils, etc.	16.389.207	16.536.420	0,9%
Electrical machinery and equipment, etc.	15.453.921	16.448.982	6,4%
Precious or semi-precious stones, precious metals, etc.	13.646.812	13.033.604	-4,5%
Plastics and products	10.571.746	10.922.169	3,3%
Iron and steel	8.860.174	10.190.617	15,0%
Knitted clothing and accessories	10.277.566	10.109.110	-1,6%
Goods made of iron or steel	10.051.285	9.822.250	-2,3%
Clothing and accessories, not knitted	8.037.378	7.385.592	-8,1%
Top 10 Total	**149.379.533**	**152.447.438**	**2,1%**
Türkiye Total	**255.627.429**	**261.854.678**	**2,4%**
Top 10 Shares	**58,44%**	**58,22%**	**-0,4%**

[15]http://www.tuik.gov.tr/

Table 1.7 Top 10 Chapters in Our Foreign Trade (*000, $)[16]

	Imports		
Product Chapters	**2023**	**2024**	**23/24**
Mineral fuels, mineral oils, etc.	69.113.811	65.589.764	-5,1%
Boilers, machines, mechanical devices, etc.	40.967.491	39.564.149	-3,4%
Motorised land vehicles etc.	32.260.862	31.670.365	-1,8%
Electrical machinery and equipment, etc.	27.947.644	27.222.058	-2,6%
Precious or semi-precious stones, precious metals, etc.	33.912.165	24.872.883	-26,7%
Iron and steel	24.160.165	23.659.330	-2,1%
Plastics and products	16.215.325	15.626.327	-3,6%
Organic chemical products	9.180.698	9.453.415	3,0%
Optics, photography, cinema, measurement, control, adjustment, medical, surgical instruments, etc.	6.452.462	6.788.850	5,2%
Aluminium and aluminium products	6.292.612	6.112.506	-2,9%
Top 10 Total	**266.503.236**	**250.559.648**	**-6,0%**
Türkiye Total	**361.966.913**	**344.019.959**	**-5,0%**
Top 10 Shares	**73,63%**	**72,83%**	**-1,1%**

In 2024, 146 billion USD worth of exports were transported by sea (with an increase of 2.1% compared to 2023), followed by 86 billion USD by road and 26 billion USD by air. The value of export goods transported by rail decreased by 6.8% to 1.8 billion USD.

In parallel with the balances in our foreign trade, our imports are dominant in maritime transport. In 2024, 188 billion USD worth of imported products were transported by sea, followed by road transport with 66 billion USD and pipelines with 44 billion USD. The value of products imported by rail is 2.7 billion USD with an increase of 35%.

These data can be seen in **Table 1.8** and Table **1.9**. Proportional data are given in **Table 1.10**. In 2024, proportionally 56% of our exports are made by sea, while this rate is 55% in our imports.

Table 1.8 Exports by Mode of Transport (Million $)[17]

	2020	2021	2022	2023	2024	23/24
By sea	**100.908**	**133.714**	**150.313**	**143.322**	**1146.273**	**2,1%**
Highway	53.128	68.749	78.852	83.127	85.848	3,3%
Airline	12.733	18.736	20.685	25.507	25.980	1,9%
Other	1.582	2.367	1.892	1.711	1.925	12,5%
Railway	1.288	1.648	2.458	1.960	1.828	-6,8%
General Total	**169.639**	**225.214**	**254.200**	**255.627**	**261.854**	**2,4%**

[16]http://www.tuik.gov.tr/
[17]http://www.tuik.gov.tr/

Table 1.9 Imports by Mode of Transport (Million $)[18]

	2020	2021	2022	2023	2024	23/24
By sea	**114.838**	**157.390**	**193.797**	**195.353**	**187.726**	**-3,9%**
Highway	41.883	48.897	59.446	66.955	66.010	-1,4%
Airline	39.260	26.057	38.581	53.841	47.444	-11,9%
Other	21.390	36.190	68.917	43.821	40.143	-8,4%
Railway	2.145	2.891	2.968	1.997	2.697	35,1%
General Total	**219.516**	**271.425**	**363.709**	**361.966**	**344.020**	**-5,0%**

Table 1.10 Cost Shares in Foreign Trade by Transport Types and Regimes (%)

	By sea		Highway		Airline		Railway	
Years	**Export**	**Imports**	**Export**	**Imports**	**Export**	**Imports**	**Export**	**Imports**
2019	60,3	53,7	30,1	17,7	8,2	13,9	0,5	0,7
2020	59,5	52,3	31,3	19,1	7,5	17,0	0,8	1,0
2021	59,4	58,0	30,5	18,0	8,3	9,6	0,7	1,1
2022	59,1	53,3	31,6	17,1	8,1	10,6	1,0	0,8
2023	56,0	53,9	32,5	18,5	9,9	14,9	8,0	0,6
2024	55,9	54,6	32,8	19,2	9,9	13,8	0,7	0,8

The tonnage shares of foreign trade according to transport types can also be seen in **Table 1.11**. As can be seen from the table, the share of maritime transport has been above 86% for the last 10 years.

Table 1.11 Tonnage Shares in Foreign Trade by Transport Types and Regimes (%)

	By sea	Motorway	Pipe and other	Railway	Airline
2014	86,2	11,2	1,7	0,4	0,5
2015	87,7	10,7	0,7	0,5	0,4
2016	88,0	10,8	0,4	0,5	0,3
2017	88,5	10,3	0,5	0,4	0,3
2018	88,7	10,3	0,2	0,4	0,4
2019	88,6	10,3	0,3	0,4	0,4
2020	88,8	9,4	1,1	0,6	0,2
2021	87,5	10,7	0,9	0,7	0,2
2022	86,8	11,5	0,6	0,7	0,6
2023	87,5	11,3	0,3	0,5	0,4
2024	87,8	10,7	0,7	0,5	0,4

[18]http://www.tuik.gov.tr/

CHAPTER 2

MARITIME AND SHIPPING SECTOR IN THE WORLD

CHAPTER 2: MARITIME AND SHIPPING SECTOR IN THE WORLD

2.1. Developments in World Maritime Trade[19]

Maritime transport serves as the main artery of global trade. Complex networks of shipping routes, ports and maritime transit points have made globalisation possible and strengthened the interconnectedness of the global economy. However, the maritime sector is facing numerous challenges, especially in recent years, which threaten the efficiency, reliability, resilience and sustainability of transport and related elements such as ports. Disruptions in the sector are almost considered as the "new normal".

One of the main weaknesses of maritime transport is its dependence on strategic passages such as the Suez Canal, the Panama Canal and even the Bosphorus. These critical waterways provide shortcuts in intercontinental sea voyages, reducing the duration and costs of navigation. However, the maritime sector is particularly vulnerable to climatic, economic, geopolitical or operational disruptions at these transition points, with serious consequences for global maritime transport.

Delays, logistical obstacles, costs and financial losses resulting from maritime disruptions are often significant. Since 2019, these disruptions have been on the rise. COVID-19, the Ever Given incident, the climatic crisis in the Panama Canal, the Ukraine crisis and the Suez Canal crisis have been major events in succession.

The situation in the Red Sea caused ships, especially those with large capacities, to avoid the Suez Canal and sail around the Cape of Good Hope, increasing distances and transit times. Of course, this has had many consequences. However, from the perspective of the maritime sector, it has resulted in higher operational costs for shipping companies, ports and trade, and these costs have been passed on to shippers. The diversion of ships to longer routes has resulted in additional carbon emissions from higher fuel consumption, and

[19] The data under this heading are compiled from UNCTAD, IMF, Clarkson Research, https://porteconomicsmanagement.org/, Drewry.

environmental challenges for the industry have tended to increase as ships have increased their cruising speeds to maintain their service programmes.

Effects of the Suez and Panama Canal, Individual Events

Maritime transport is the main mode of transport of internationally traded goods and accounts for more than 80% of international trade by volume. Demand for maritime transport is highly inelastic, which means that changes in freight rates do not significantly affect the quantity of goods shipped. However, a severe drought in 2023 affected the Panama Canal, through which 6% of global trade passes, and the number of ships allowed to pass each day was reduced. Although drought conditions have since eased, transit remains limited until August 2024.

On the other hand, attacks on merchant vessels in the Red Sea and Gulf of Aden, which account for around 15% of global trade, have also had a major impact on shipping since November 2023. The attacks caused many carriers to avoid the Red Sea altogether, diverting their vessels around the Cape of Good Hope and reducing daily Suez Canal transits by more than 60% (**Figure 2.1**).

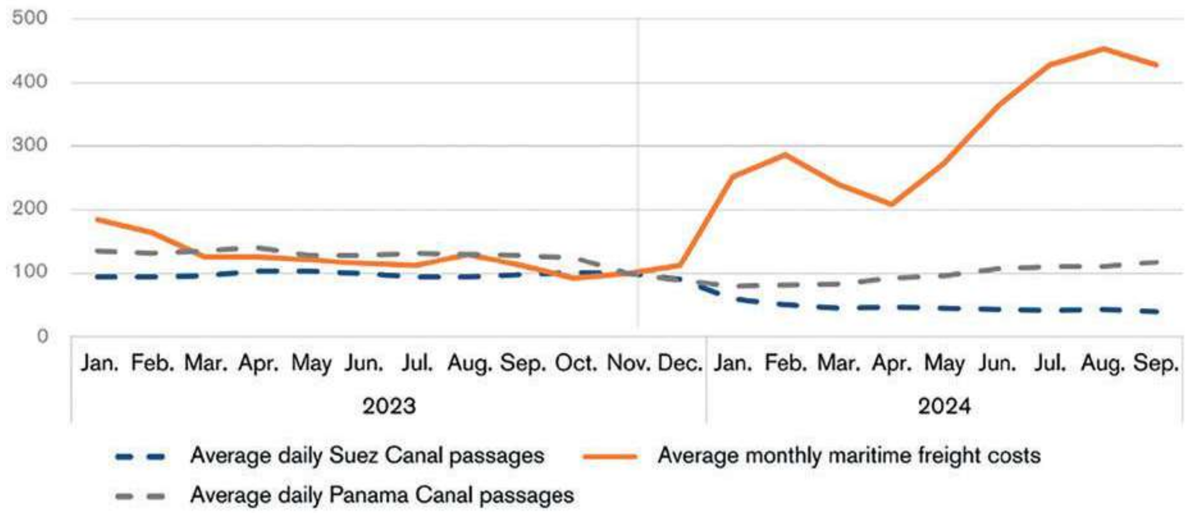


Figure 2.1 Development of transits and freight in the Panama and Suez canals, January 2023-September 2024 Index (100 = November 2023)

Globally, shipping freight costs have increased almost fivefold since October 2023, from USD 1,095 to USD 5,040. However, average freight costs are now half of what they were at the peak of the pandemic crisis in September 2021, when average monthly freight costs reached USD 10,865. The initial increase was partly due to congestion in the Panama Canal and Red Sea. However, this increase can also be attributed to various factors, such as increased consumer activity, strikes in the transport sector, accidents and extreme weather events. While demand was relatively weak in the first months of 2024, consumer spending increased in both Europe and Asia, leading to an increase in sea freight shipments.

Moreover, the North American freight market has faced significant challenges since last April, including a railway strike in Canada and the collapse of the Baltimore bridge, which blocked access

to the port for more than a month. In mid-April 2024, dense fog disrupted operations in Shanghai and Ningbo, the two largest ports in China (and indeed the world), while ports in Malaysia and Singapore experienced delays due to heavy rainfall. More recently, in September 2024, Typhoon Bebinca caused severe congestion at China's major container ports.
The increased costs associated with these maritime disruptions inevitably translate into higher transport costs that are passed on to consumers. In addition to uncertainty and volatility, these unfavourable conditions in the maritime sector increase inflation and undermine economic growth. Small island developing states and least developed countries are particularly affected.

In contrast to longer shipping routes and increasing carbon emissions, maritime transport also faces challenges such as decarbonisation and the need to transition to cleaner energy sources. Shipping represents 3% of all global greenhouse gas emissions and the urgency to reduce these emissions and overhaul the sector's reliance on traditional fossil fuels is critical. The steps to be taken are often obvious and include a move to paperless and digitised procedures, innovative approaches to operations and a shift to cleaner technologies and ships equipped to run on alternative fuels. The cost of this transformation is of course high, but the industry will not have the option of shying away from decarbonisation and sustainability goals. This is also a strategic necessity.

On the other hand, as we have frequently mentioned in TURKLIM Port Sector Reports published in the past, it is seen that some alternative routes continue to gain importance, especially as a result of climate change. Especially the Arctic Sea Passage poses a risk for the future of the main East-West trade route. In 2024, Russia's opening of this passage to maritime traffic was reflected in a significant increase in the amount of cargo transported compared to the previous year. Other reasons for the importance of this route include the Suez and Panama Canal disruptions mentioned in the previous sections, Russia's strategic policy and the route's significant time and cost advantage.

Finally, at this point, it would be appropriate to mention the events in the US port of Baltimore. In 2022, the collision of ships named Ever Forward and Valencia in the port area caused negative consequences such as some containers on the ships falling into the sea and marine pollution. In addition, the accident caused disruption of operations in the port and naturally caused delays in the supply chain. Furthermore, clean-up and rescue operations were carried out due to its environmental impacts. On the other hand, in March 2024, a container ship collided with the Francis Scott Key Bridge, causing the bridge to collapse and restricting access to the port. This accident, which caused billions of dollars of commercial and structural damage in addition to loss of life, again caused disruptions in port operations and delays in maritime traffic. In addition, land traffic was also adversely affected during the repair process of the bridge.

As can be seen, future-proofing global supply chains depends on strengthening maritime transit points, which are vital for the resilience of maritime trade. To achieve more robust, reliable and resilient maritime transit points, maritime transport and maritime logistics need to embrace green technologies, digitalisation and greater international cooperation.

Sector expectations in the near future

Despite all these setbacks, expectations for the future of the sector are positive. As a matter of fact, UNCTAD estimates that the volume of maritime trade will grow by 2.5% annually and the volume of containerised trade by 2.9% in 2025. UNCTAD expects total maritime trade to grow at an average annual rate of 2.4% and containers handled at ports at 2.7% in the period 2025-2029 (**Table 2.1**). This forecast is based on projected gross domestic product (GDP) and merchandise trade growth of 2.7% and 3.0%, respectively.

[20]Northern Sea Route – NSR

Table 2.1 International maritime trade development forecast, 2024-2029 (%)

	Total Maritime Trade (Tonnes)	Container Trade (TEU)
2025	2,5	2,9
2026	2,4	2,9
2027	2,3	2,6
2028	2,3	2,5
2029	2,3	2,5

As can be seen, maritime trade volumes are expected to continue to increase in 2025 and beyond. This increase is fuelled by demand for large volumes of commodities (iron ore, coal, grain and bauxite), gas, oil and container trade. The prospects for seaborne trade remain favourable, but depend on how downside risks continue to evolve, including the war in Ukraine, heightened geopolitical tensions and economic uncertainty.

Rising geopolitical tensions may trigger new shocks in global commodity markets. In particular, oil and grain shipping routes in the Suez Canal, the Red Sea and the Black Sea could be affected, leading to potential increases in energy and food prices. In addition, technological supply chains involving chips and semiconductors in East Asia are vulnerable to escalating tensions.

The medium-term outlook for maritime trade is influenced by both upside and downside factors. Downside factors mainly include developments that may lead to a slow recovery in global markets. These variables were mentioned in the first chapter. Recall that in the United States, lower consumer spending, tight fiscal policies and a slowing labour market have led to a downgrade in growth forecasts for 2025. In addition, ongoing manufacturing weaknesses in Germany, economic policy uncertainties stemming from the 2024 and 2025 elections in various countries, rising trade tensions and inward-looking policies further increase these risks. High inflation in emerging markets could prompt central banks to maintain tight monetary policy, further fuelling concerns about the cost of living.

Of course, there are also positive expectations. Global trade is expected to grow by between 3.1 and 3.4% annually, driven by strong export performance in the major Asian economies, particularly in the technology sector. Trade involving developing countries, including the much underestimated South-South trade , is experiencing strong growth, outpacing trade involving developed countries. Sectors related to green energy and artificial intelligence products are expanding, fuelling trade growth.

Maritime trade and GDP relationship

Maritime trade has been shaped according to the trends in the world economy and has experienced significant changes. Therefore, the relationship between GDP and maritime trade has shown a remarkable correlation in every period. In 2023, maritime trade volume grew by 2.4%, while GDP output grew by 2.7%. On the other hand, the GDP growth rate significantly exceeded the growth rate of maritime trade in 2021 and 2022. This is a different pattern from that observed since 2006, when maritime trade generally expanded and contracted at a faster rate than global GDP.

[21]Trade among developing countries with each other.

The ratio of trade to GDP, i.e. the sensitivity of trade in goods to changes in GDP, has been falling since 2010. The change in the ratio of trade to GDP has also been observed in maritime trade data, especially since 2018, with goods trade growing relatively slower than GDP. In addition to the existing tariffs imposed by the US on China, other cyclical factors such as the new tariffs imposed by the new administration in the US, inflationary pressures in Europe and North America that negatively affect the consumption of traded goods and restrict trade growth, and the COVID-19 outbreak and recent disruptions that have occupied our agenda for a long time have also affected this relationship in recent years (**Figure 2.2**).

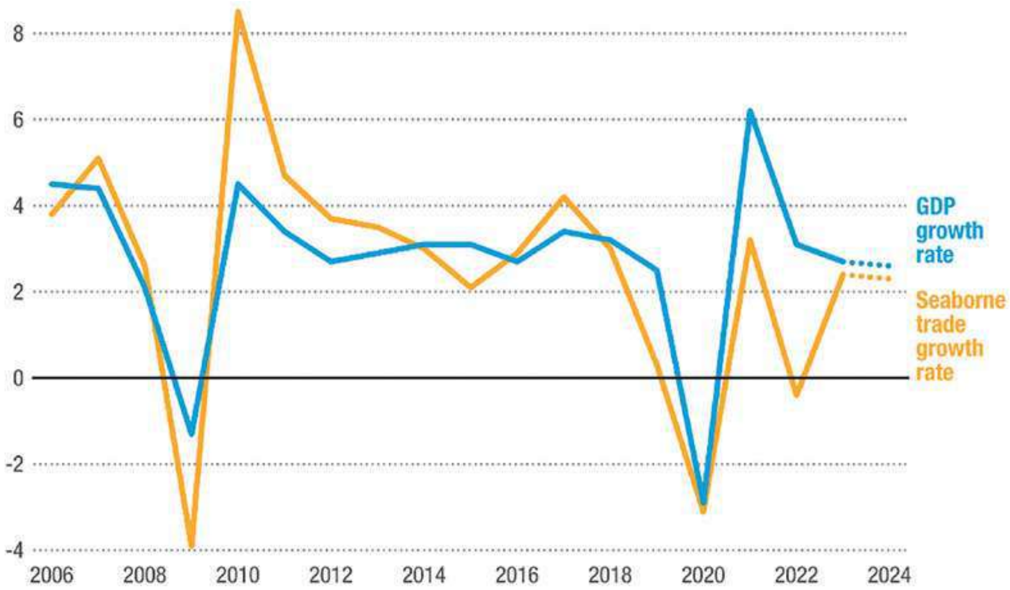


Figure 2.2 Development of international maritime trade and world GDP (Annual%age change)[22]

The changing trade-to-GDP ratio is linked to the slowing pace of globalisation in trade in goods as opposed to trade in services. As global economic growth shifts towards the services sector, which relies less on maritime trade , the global economy may continue to grow, but maritime trade volumes may not keep pace. The shift towards cleaner energy and sustainable development can be seen as a stabilising factor on the path to sustainable development, which may increase trade in commodities such as minerals used in the production of green technologies. At the same time, maritime trade may decline as production becomes more localised and supply chains are restructured to minimise emissions. This could lead to a scenario of slower trade volume growth, with changing trade patterns and declining long-distance maritime trade in favour of shorter/regional routes. Of course, these developments will directly affect the demand for maritime transport and the demand for the merchant vessel fleet.

2.1.1. Sea Freight

In 2024, maritime trade volumes were mainly determined by dry cargo and oil shipments, followed by container trade. In 2022 and 2023, maritime trade, which was slightly above 12 billion tonnes and remained stable, increased by 2.3% to 12.6 billion tonnes in 2024 (**Table 2.2**).

[22]UNCTAD

Table 2.2 World maritime transport development by cargo groups (million tonnes)[23]

All Loads (TON)	2022	2023	2024	Change 23/24
Dry Bulk Cargo	5.299	5.559	5.742	3,3%
Crude Oil and Products	2.987	3.053	3.026	-0,9%
Container	1.841	1.848	1.940	5,0%
Other	1.383	1.304	1.352	3,7%
Gas	534	558	570	2,2%
Total	**12.044**	**12.352**	**12.630**	**2,3%**

In terms of cargo groups, containers were the cargo group with the highest increase by 5% in tonnes, while dry bulk cargoes increased by 3.3% to 5.7 billion tonnes. Crude oil and petroleum, which is the most traded cargo group after dry bulk cargoes, decreased slightly by -0.9%, while the volume of this product group was 3 billion tonnes. The total tonnage of container cargo, whose detailed data in TEUs will be analysed in the following sections, was 1.9 billion tonnes. Liquefied gas consisting of LPG and LNG increased by 2.2%, reaching a total cargo volume of 570 million tonnes.

The proportional distribution of cargo groups can be seen in **Figure 2.3**. In 2024, dry bulk cargoes will have the highest share with 45%, followed by liquid bulk cargoes with 24% and containers with 15%. The share of gases is 5%.

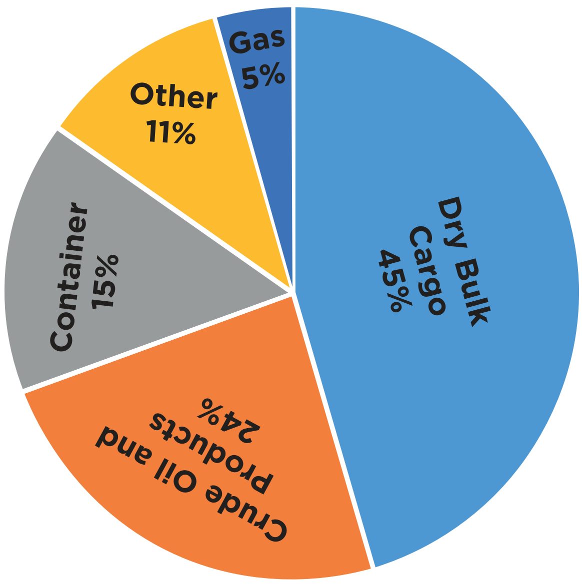


Figure 2.3 In 2023, the share distribution of cargo groups transported by sea

Details on load groups will be analysed in the following sections.

2.1.2. Merchant Fleet

At the beginning of 2024, global fleet capacity grew by 3.4%. This is slightly higher than 3.2% in 2022, but lower than the average growth of 5.2% recorded between 2005 and 2023, driven by the rapid fleet expansion between 2005 and 2012 (**Figure 2.4**).

[23]Clarkson Research

Figure 2.4 Trends in annual world fleet growth

Fleet growth was uneven in 2023, with containership capacity increasing by around 8% and liquefied gas carriers by 6.4%. Tankers, on the other hand, remained low, increasing by less than 2%. The world's total fleet capacity reached about 2.4 billion DWT, of which 42.7% was bulk carriers and 28.3% was oil tankers (**Table 2.3**).

Table 2.3 World fleet by ship types (*000 DWT and share)[24]

Main Ship Types	2023		2024		23/24 (%)
	DWT	Share (%)	DWT	Share (%)	
Dry bulk carriers	974.452	42,8	1.004.281	42,7	3,1
Oil tanker	652.850	28,7	665.424	28,3	1,9
Container ships	305.844	13,4	329.490	14,0	7,7
Other ship types	261.525	11,5	270.657	11,5	3,5
Offshore vessels	87.055	3,8	89.093	3,8	2,3
Gas vessels	88.221	3,9	93.882	4,0	6,4
Chemical tanker	51.535	2,3	52.582	2,2	2,0
Other	26.177	1,1	26.316	1,1	0,5
Ferries and cruise ships	8.537	0,4	8.784	0,4	2,9
General cargo ships	82.708	3,6	84.047	3,6	1,6
World Total	**2.277.379**	**100,0**	**2.353.899**	**100,0**	**3,4**

Over the years, the structure of the world merchant fleet has evolved in parallel with the changes in the structure of maritime trade. Dry bulk cargo, especially bulk commodities such as iron ore, coal and grain, increased their share in maritime trade and overtook oil cargo. As a result, the share of dry bulk carriers has increased over the years and overtook the share of oil tankers. On the other hand, containerisation has reduced the need for general cargo ships and bulk cargoes are increasingly being transported by containers. Meanwhile, the share of container ships and other specialised vessels continues to exceed the share of general cargo ships (**Figure 2.5**).

[24]UNCTAD, RMT, 2024

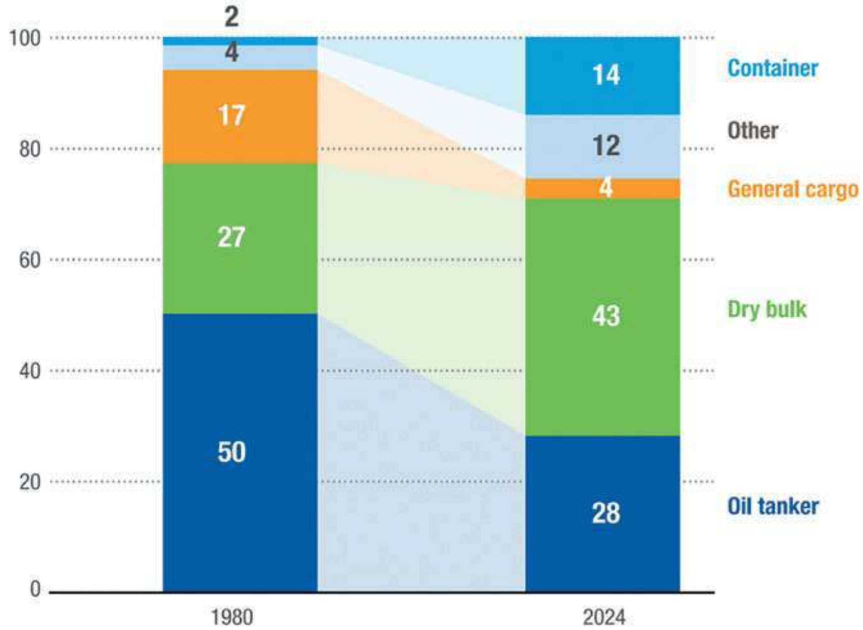


Figure 2.5 % share of total DWT

In 2023, the capacity of ships used in trade grew faster than maritime trade, but lagged behind demand measured in tonne-miles. Fleet capacity growth is projected to increase at a similar rate in 2024 (3.4%) before slowing to 2.7% in 2025. This slowdown is a reflection of recent trends such as low order books, long lead times at shipyards, high newbuilding prices and a strong second-hand market. Despite the current challenges and rising operating expenses and declining revenues compared to the record highs seen in 2022, most vessel segments have experienced solid cash flow and continued asset price increases.

In 2023 and the first half of 2024, vessel capacity supply and vessel utilisation were shaped by system inefficiencies and new opportunities to utilise fleet capacity resulting from ongoing supply chain disruptions and re-routing (due to channel crises). An example of this is the use of "shadow" fleets deployed to access international markets for Russian oil, fuelled by the war between Russia and Ukraine and reinforced by recent sanctions. This trend has extended the service life of existing vessels, increased vessel sales and purchases, raised second-hand prices, reduced dismantling levels and motivated some investments in newbuildings.

Current status of the merchant fleet

While the global fleet capacity is predominantly owned by developed countries, it mostly flies the flags of developing countries. In 2023, the top 35 flag registries account for 94% of the world fleet. Eighteen of the leading registries are from emerging economies and account for 76% of the world fleet capacity. The 10 largest registry flags account for more than 78% of world capacity and have both open (i.e. registries that allow the registration of foreign-owned vessels) and national (local) registries. These are Liberia, Panama, Marshall Islands, Hong Kong (China), Singapore, China, Malta, Bahamas, Greece and Japan.

Having surpassed the Panama registry in terms of DWT capacity in 2022, the Liberian registry maintained its first place in 2023 (17.3%), followed by Panama (16.1%) and Marshall Islands (13.1%). The Liberian registry increased its capacity by about 8% in 2023 compared to the previous year,

more than double the growth in the Panama and Marshall Islands registries. In terms of the number of vessels, Panama has the largest share among these three economies with more than 8,300 vessels, followed by Liberia and the Marshall Islands. These three leading flags account for 46.5% of global shipping capacity in 2023. Meanwhile, China (9,530) and Indonesia (12,226) have more vessels (**Table 2.4**).

Table 2.4 World fleet flag registry (100 GT and above, 2024)[25]

	Flag State	Number of Ships	Number Share (%)	DWT*000	DWT Share (%)	Average Ship Size (DTW)	DWT Development 21/22 (%)
1	Liberia	5.215	4,8	408.369	17,3	78.307	7,9
2	Panama	8.338	7,7	379.833	16,1	45.554	3,8
3	Marshall Ad.	4.273	3,9	308.501	13,1	72.198	2,9
4	Hong Kong	2.487	2,3	200.378	8,5	80.570	0
5	Singapore	3.245	3,0	141.013	6,0	43.455	4,3
6	China	9.530	8,8	133.647	5,7	14.024	4,8
7	Malta	1.867	1,7	102.467	4,4	54.883	-6
8	Bahamas	1.266	1,2	72.438	3,1	57.218	0,5
9	Greece	1.211	1,1	56.279	2,4	46.473	-4,5
10	Japan	5.265	4,8	43.007	1,8	8.168	3,1
11	Indonesia	12.226	11,2	32.741	1,4	2.678	8,2
12	Cyprus	993	0,9	30.646	1,3	30.862	-3
13	Madeira	814	0,7	29.290	1,2	35.982	9,2
14	Denmark	580	0,5	24.887	1,1	42.909	-1,4
15	S. Korea	2.162	2,0	21.221	0,9	9.816	12
16	Iran	984	0,9	20.779	0,9	21.117	0,3
17	Norway	690	0,6	20.139	0,9	29.187	-5,3
18	Isle of Man	262	0,2	19.355	0,8	73.873	-3,6
19	India	1.900	1,7	18.421	0,8	9.695	1,6
20	Saudi Arabia	443	0,4	14.287	0,6	32.250	6,6
21	Vietnam	1.953	1,8	13.236	0,6	6.777	6,6
22	USA	3.501	3,2	13.215	0,6	3.775	4,7
23	Russia	2.902	2,7	11.867	0,5	4.089	5,7
24	United Kingdom	843	0,8	11.135	0,5	13.209	4,2
25	Malaysia	1.778	1,6	9.440	0,4	5.309	-0,2
26	Germany	593	0,5	8.056	0,3	13.585	10,8
27	Cameroon	295	0,3	8.050	0,3	27.290	11
28	Belgium	191	0,2	7.974	0,3	41.751	-12,9
29	Palau	536	0,5	7.892	0,3	14.723	49,2
30	Italy	1.240	1,1	7.670	0,3	6.185	-15,8
31	France	492	0,5	7.512	0,3	15.269	28,2
32	Türkiye	1.203	1,1	7.230	0,3	6.010	8,4
33	Nigeria	945	0,9	6.866	0,3	7.266	16,2
34	Netherlands	1.191	1,1	6.714	0,3	5.637	1,7
35	Bermuda	110	0,1	6.541	0,3	59.461	-7,1
Top 35		**81.524**	**74,9**	**2.211.094**	**93,9**	**27.122**	**3,2**
World		**108.789**	**10**	**2.353.899**	**100**	**21.537**	**3,4**

[25] UNCTAD, RMT, 2024

Ship owners have direct control over their fleet and investment decisions. These decisions include the size and type of ships, boarding technology, fuels, machinery and propulsion systems. Global fleet ownership by number and capacity of vessels continues to be concentrated in developed economies, but some emerging economies have also entered the top 10 list.

In 2024, more than 70% of global ship capacity in DWT and more than half of all ships were registered under a foreign flag. This underlines a distinctive feature of international shipping, where ship owners and the flags under which they are registered are often two separate entities. This ratio varies across economies. Some economies, such as Germany, Greece and Japan, have more than 80% of their fleet capacity registered under a foreign flag. The entire tonnage of Bermuda, Monaco and Oman is foreign flagged. At the other end of the spectrum, capacity in Iran, Bangladesh, Indonesia and Saudi Arabia is predominantly national flagged. In Indonesia, national flag capacity is predominantly used for inter-island transport, while in Saudi Arabia it largely reflects the nationally controlled oil tanker fleet.

In 2024, 17 developed and 18 developing economies account for the 35 largest ship-owning countries, with 52.3% and 42.1% tonnage, respectively. More than half of the world's ship capacity is owned by shipowners in developed economies, while most of the capacity (76%) is registered under the flags of developing economies.

The contribution of emerging economies to the ownership list is largely due to China, Singapore, Hong Kong China and Taiwan Province of China, all of which are among the top 10 shipowning countries. Fleet ownership is concentrated in Asia, Europe and North America. Although its share remains limited, Bangladesh (0.2%) enters the top 35 in 2024, while Kuwait drops out (**Table 2.5**).

Table 2.5 Top 25 countries fleet statistics (2024, 1000 GT and above)[26]

	Country of ownership or region	National Flag	Foreign Flag	Total	National Flag	Foreign Flag	Total	National Flag Share (%)	World Share (%)
1	Greece	580	4 406	4.992	49.985.667	344.971.148	394.977.181	87,3	16,9
2	China	6.600	2.772	9.418	130.737.555	178.336.427	309.870.897	57,6	13,3
3	Japan	959	3.142	4.104	38.689.931	203.666.970	242.366.672	84,0	10,4
4	Singapore	1.350	1.445	2.824	67.827.285	78.156.951	146.047.319	53,5	6,3
5	Hong Kong	869	1.104	2.000	76.961.461	57.939.090	135.586.887	42,7	5,8
6	S. Korea	826	852	1.688	19.896.324	77.045.438	97.020.891	79,4	4,2
7	Germany	172	1.918	2.091	7.492.926	66.931.088	74.427.230	89,9	3,2
8	Taiwan	144	890	1.043	5.826.691	54.846.644	60.735.889	90,3	2,6
9	United Kr.	334	928	1.267	9.070.489	47.538.877	56.980.416	83,4	2,4
10	Norway	936	898	1.836	17.331.399	36.441.844	53.903.936	67,6	2,3
11	Bermuda	0	420	420	-	52.293.715	52.293.715	100,0	2,2
12	UAE	130	1.291	1.427	596.404	50.624.996	51.247.355	98,8	2,2
13	USA	770	1.010	1.788	10.477.424	39.245.905	50.416.065	77,8	2,2
14	Türkiye	401	1.619	2.030	6.623.393	40.174.680	46.849.025	85,8	2,0
15	Switzerland	14	647	661	835.748	40.293.135	41.128.883	98,0	1,8
16	India	926	345	1.275	17.670.993	23.006.477	40.697.051	56,5	1,7
17	Denmark	399	373	772	20.313.094	18.447.451	38.760.545	47,6	1,7
18	Indonesia	2.398	132	2.540	28.277.194	3.430.913	31.980.209	10,7	1,4
19	Monaco	0	337	337	-	31.699.502	31.699.502	100,0	1,4
20	Cyprus	113	311	424	3.939.325	25.272.183	29.211.508	86,5	1,3
21	Belgium	81	211	292	7.038.164	17.182.252	24.220.416	70,9	1,0
22	Russia	1.551	269	1 828	10.708.028	10.997.997	21.726.655	50,6	0,9
23	Iran	240	13	254	18.340.397	679.712	19.021.661	3,6	0,8
24	France	144	309	453	4.145.965	14.162.666	18.308.631	77,4	0,8
25	Netherlands	650	536	1.186	5.437.806	12.600.744	18.038.550	69,9	0,8
World		**26.692**	**30.135**	**58.173**	**650.553.871**	**1.650.129.315**	**2.334.036.650**	**70.7**	**100,0**

[26]UNCTAD, RMT, 2024

In terms of monetary value, the global fleet reached $1.37 trillion in 2024, with the top 10 shipowning countries accounting for nearly two-thirds of the total value. Greece ranked first, followed by China and Japan. The top 35 registries accounted for more than 93% of the global fleet value, with the Panama fleet accounting for close to 13% of the total, followed by Liberia (12.6%) and the Marshall Islands (11.9%).

2.1.3. Container Transport and Container Line Operators[27]

MSC, which ranks first among global container operators in terms of capacity and the number of ships it operates, has 886 ships and a total capacity of 6.4 million TEU as of February 2025. Maersk, which ranks second, operates 735 vessels with a total capacity of 4.5 million TEU, while CMA CGM, which ranks third, operates 663 vessels with a total capacity of 3.9 million TEU. Considering the order books, it is expected that CMA CGM will surpass Maersk in terms of the capacity of operated vessels and rank second in the short term, considering the 94 vessel orders with a capacity of approximately 1.5 million TEU. MSC is expected to maintain its top position for many years with 132 ship orders with a capacity of 2 million TEU.

Considering that the number of ships used in container trade as of February 2025 is 7,255 and the total capacity of these ships is 31.7 million TEU, it is seen that the top 10 shipowners control 55% of the number of ships operated and 84.2% of the capacity.

In 2025, there have been some changes in the number of Turkish shipowners in the top 100. ARKAS dropped to 34th place with 37 vessels and 59 thousand TEU capacity, followed by AKKON with 27 vessels and 38 thousand TEU capacity, and TURKON with 8 vessels and 16 thousand TEU capacity. Unlike the previous years, MEDKON did not take place in the top 100 (**Table 2.6**).

Table 2.6 Turkish and foreign container line operators top 10 (February 2023)[28]

	Operator	Number of vessels operated	Number of vessels owned	Operational capacity (TEU)	Order Book (TEU)	Number of Ships Ordered	Average Capacity of Orders (TEU)
1	MSC	886	592	6.386.433	1.993.139	130	15.332
2	Maersk	735	335	4.518.829	846.042	64	13.219
3	CMA CGM	663	310	3.874.042	1.324.494	82	16.152
4	COSCO	515	198	3.335.569	881.080	52	16.944
5	Hapag-Lloyd	300	130	2.352.733	442.728	35	12.649
6	ONE	255	93	1.969.127	610.585	47	12.991
7	Evergreen	224	144	1.777.096	821.423	59	13.922
8	HMM	82	62	906.167	88.700	10	8.870
9	ZIM	130	12	781.026	31.600	4	7.900
10	Yang Ming	98	59	711.393	77.500	5	15.500
30	ARKAS	37	35	58.588	26.292	6	4.382
50	AKKON	27	2	38.081			
60	TURKON	8	5	15.703	8.024	2	4.012
	Top 10 Total	**3.960**	**1.977**	**26.724.787**			
	Top 10 Shares	**54,6%**	**27,3%**	**84,2%**			

[27]The data under this heading are mainly taken from Alphaliner.
[28]https://alphaliner.axsmarine.com/PublicTop100/

As is well known, operational co-operation between container vessel operators takes various forms such as slot leasing, vessel sharing agreements and strategic alliances. The first strategic alliances between these lines date back to the mid-1990s, when the first Post-Panamax container ships started to be used in the Europe-Far East trade. Since these years, there have been significant changes in these alliances.

Significant Changes in Global Maritime Alliances

The container shipping industry is undergoing significant restructuring in 2025, with major carriers announcing new strategic alliances and service networks. At the centre of these changes is the dissolution of long-standing alliances, such as the 2M partnership, and the establishment of new collaborations that will reshape global shipping routes and operations.

These changes, effective 1 February 2025, reflect a strategic move towards more flexible partnerships that will ensure carriers remain well positioned to meet their changing strategic priorities.

As market conditions change, carriers are re-evaluating their alliance strategies to better align with their long-term strategic objectives. These alliances have traditionally helped to improve efficiency and pool resources, but recent shifts have been directed towards optimising operations and meeting strategic objectives.

One of the most notable changes was the end of the 2M Alliance between Maersk and MSC, which had been a cornerstone of global shipping for years. As of February 2025, MSC operates independently on the East-West trade lanes, while Maersk has joined Hapag-Lloyd in a newly formed partnership called "Gemini Cooperation". This new alliance is expected to provide enhanced service offerings on critical east-west routes, combining Maersk's extensive network with Hapag-Lloyd's operational expertise.

On the other hand, the remaining members of THE Alliance (Transport High Efficiency Alliance), ONE (Ocean Network Express), HMM (Hyundai Merchant Marine) and Yang Ming intend to rebrand as Premier Alliance. The fact that Premier Alliance will sign a slot sharing agreement with MSC in the Asia-Europe trade signals a significant change in the way these major carriers co-operate and compete. According to the schedules published by Premier Alliance and MSC, this co-operation will cover nine Asia-Europe sailings, but both carriers will retain some autonomy and MSC will operate its Asia-North Europe sailings independently. In a parallel development, MSC has also signed a three-year vessel service agreement with ZIM covering transpacific trade (**Figure 2.6**).

Figure 2.6 New alliances of container transport

Sustainability and New Regulations Drive Change

While the restructuring of alliances is driven by market forces, it is also heavily influenced by the increasing emphasis on sustainability. In 2025, the International Maritime Organisation (IMO) will introduce new regulations aimed at reducing greenhouse gas emissions, including more stringent fuel standards and greenhouse gas pricing mechanisms. These regulations will put additional pressure on carriers to adopt more sustainable practices and push them to invest in environmentally friendly technologies and cleaner fuel options.

For stakeholders in the logistics and trade sectors, the integration of sustainability into these new alliances will be crucial. Carriers will need to balance the costs of complying with environmental regulations while maintaining competitive pricing and reliable services. Green shipping corridors prioritising low-emission routes are expected to play a key role in shaping the future of container transport.

Service Reliability and its Effect on Competition

With the end of the 2M alliance and the establishment of new alliances such as Gemini and Premier, service reliability and competition in the container transport sector are expected to change significantly. For example, the Gemini alliance has stated that it aims for 90% schedule reliability in the long term. In response, Ocean Alliance has maintained its commitment to improve voyage schedule reliability during this transition period.

These changes also offer opportunities for the container transport sector. By forming strategic partnerships and sharing capacity on key routes, carriers can improve operational efficiency, reduce costs and offer more competitive services. This increased competition can benefit cargo owners and logistics service providers by providing greater flexibility and access to a wider range of transport options.

A Positive Transformation in Global Maritime Transport

The changes that will take effect in 2025 represent more than just a restructuring of alliances. Carriers are increasingly focused on capitalising on economies of scale, reducing their environmental impact and improving their service offerings to remain competitive in a rapidly changing market.

While the immediate impact of these changes may be challenging, the long-term outlook points to an opportunity. The dissolution of the 2M partnership, the rise of new alliances such as Gemini and Premier, and MSC's expansion of its independent network are likely to foster a more resilient and sustainable shipping industry.

On the other hand, the measurements made by independent companies about the reliability of voyage schedules in container transport reflect the current situation. These data are important because the reliability of voyage schedules in container transport is a critical indicator of success.

Figure 2.7 and **Figure 2.8** show the change graph of the data for the year 2024 in comparison with the previous years. Throughout 2024, programme reliability has largely remained in the 50%-55% range. On an annual basis, the schedule reliability is (-3.0%)%age points lower in December 2024, but increases thereafter. The average delay for delayed vessel arrivals decreased by -0.23 days from the previous month to 5.28 days, which is the lowest delay data since July 2024.

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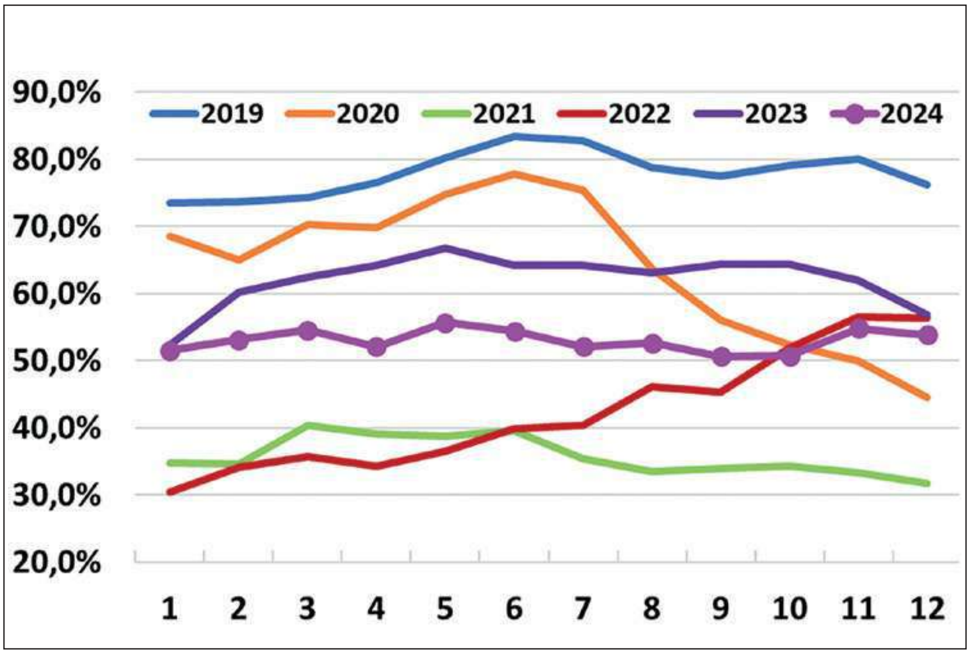


Figure 2.7 Global reliability rate of ship voyage plans by years and months[29]

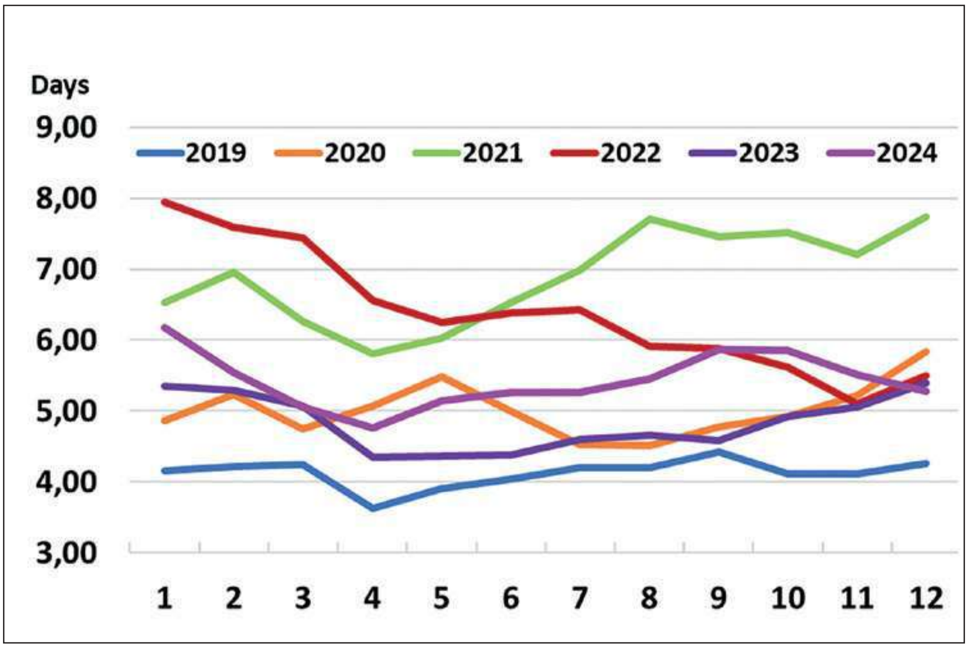


Figure 2.8 Average number of days of late vessel calls in world ports on the basis of years and months[30]

[29]https://www.sea-intelligence.com/press-room/307-2024-schedule-reliability-largely-within-50-55
[30]https://www.sea-intelligence.com/press-room/307-2024-schedule-reliability-largely-within-50-55

2.1.4. Shipbuilding Industry

2023 was an important year for the shipbuilding industry, and a significant amount of ship tonnage was delivered, especially due to the orders placed in the post-pandemic period. A total of 1,665 ships were delivered, adding 64.8 million gross tonnes of capacity to the active fleet. This tonnage corresponds to 3% of the existing fleet.

The gross tonnage of ships delivered increased in 2023 (16%), reversing the downward trend in 2022. Containerships accounted for 35.3% of the total delivered, followed by bulk carriers (30.7%), oil tankers (12.1%) and liquefied gas carriers. The distribution of gross tonnage among these ship types is detailed in **Table 2.7**. In 2024, most of the new deliveries are for container ships and gas carriers, while most of the new orders are for tankers and bulk carriers.

Table 2.7 New shipbuilding deliveries by ship types and countries of construction, 2023 (*000 GR)[31]

Vessel Type	China	Japan	South Korea	Philippines	Vietnam	Europe	Other countries	Total	Share (%)
H. Oil Tanker	1.844.222	350.537	4.988.816	2.232	425.986	130.282	90.014	7.832.089	12.1
Bulk Cargo G.	12.473.399	6.352.971	195.148	790.002	46.011	0	0	19.857.531	30.7
General Cargo G.	644.605	270.809	269.391	0	818	146.927	95.291	1.427.841	2.2
Container G.	13.512.628	2.231.385	7.100.704	0	0	0	42.600	22.887.317	35.3
Gas Ship	1.280.996	351.535	4.952.060	0	0	2.999	12.123	6.599.713	10.2
Chemical Tanker	524.528	207.459	45.930	0	0	9.797	9.376	797.090	1.2
Offshore Vessel	1.517.788	3.922	740.491	0	31.352	50.903	149.790	2.494.246	3.9
Ferry/Passenger G.	564.993	39.132	24.161	13.488	8.400	1.263.319	74.068	1.987.561	3.1
Other	684.261	157.432	1.185	216	513	19.699	28.075	891.381	1.4
Total	**33.047.420**	**9.965.182**	**18.317.886**	**805.938**	**513.080**	**1.623.926**	**501.337**	**64.774.769**	**100**
Share (%)	**51.0**	**15.4**	**28.3**	**1.2**	**0.8**	**2.5**	**0.8**	**100.0**	**0%**

In 2023, China, South Korea and Japan continued to dominate the shipbuilding market, with these three countries accounting for about 95% of global production. China delivered more than 50% of the world's new ship capacity for the first time. South Korea contributed 28.2% and Japan 14.9%. China dominated all ship segments except oil tankers and liquefied gas carriers, which were dominated by shipbuilders in South Korea. The declining contribution of Japan and South Korea in recent years has allowed Chinese shipyards to take the lead. In addition to entering the liquefied natural gas (LNG) carrier segment in 2022, China will overtake South Korea in container shipping in 2023. South Korean shipyard production peaked at around 35% in 2016. Historically, Japan's production hovered around 50% in the 1970s and 1980s.

2.1.5. Ship Recycling Sector

In 2023 and the first half of 2024, ship scrapping or recycling activities were stagnant. Older vessels were used to capitalise on opportunities arising from disruptions in shipping routes and to take advantage of high freight rates. Continued uncertainty about the future regulatory framework and low-carbon ship technologies and fuels also contributed to low levels of ship dismantling.

A total of 431 ships were sent for scrapping in 2023, 11 ships less than the previous year. In tonnage terms, scrapping tonnage increased by 4.3% year-on-year to 7.5 million gross tonnes, or 0.5% of the total active fleet. The volume of ships sold for scrapping in 2022 and 2023 is the lowest in a decade. After a 50% reduction in 2022, volumes increased by only 4% in 2023.

[31]UNCTAD, RMT, 2024

Bulk carriers (40.7%), containerships (24.8%) and offshore supply vessels (10.6%) accounted for most of the tonnage sold for scrapping. Although more bulk carriers were scrapped in 2023, dismantling levels remained limited. Container ship dismantling, which almost came to a standstill in 2021-2022, resumed in 2023, but the need to re-route around the Cape of Good Hope slowed down scrapping activities (Table **2.8**).

In the following sections of the report, developments in the main cargo groups are presented under separate headings.

Table 2.8 Ships sold for scrapping and dismantling countries, 2023 (1000, GT)[32]

Vessel Type	Bangladesh	Pakistan	India	Türkiye	Brazil	Other	Total	Share
Bulk Cargo Ship	21.859	5.829	0	2.546	0	18	30.415	40,7
Container Ship	4.447	11.329	1.306	304	0	115	18.538	24,8
Offshore Vessel	1.102	937	1.405	114	2.733	163	7.922	10,6
Liquefied Gas Vessel	2.138	2.951	1.097	0	0	5	6.234	8,3
Crude Oil Tanker	2.014	1.027	18	744	0	35	4.156	5,6
General Cargo Ship	1.587	561	453	0	0	44	3.038	4,1
Ferry and Passenger Ship	262	155	838	0	0	11	1.367	1,8
Chemical Tanker	32	982	0	4	0	7	1.091	1,5
Other	749	885	181	0	0	17	1.984	2,7
Total	**3.419**	**2.466**	**530**	**371**	**273**	**416**	**7.474**	100,0
Share (%)	**45.7**	**33.0**	**7,1**	**5,0**	**3,7**	**5,6**	**100,0**	

2.2. Dry Bulk Cargoes

Dry bulk cargoes are divided into two groups as major and minor. These cargoes are the largest cargo group transported by sea. While major cargoes consist of iron ore, coal and cereals, all other dry bulk cargoes are in the minor bulk cargo group. Since about 6% of global dry bulk trade passes through the Suez Canal, dry bulk trade has been less affected by disruptions in the Red Sea and the Suez Canal. However, the disruptions particularly affected grain exports from the United States and other dry bulk exports from the North Atlantic to Asia. The iron ore trade and shipments of steel products were also disrupted by cargo re-routing and increased transit times.

In 2023, the situation in the Panama Canal caused delays and increased shipping costs, affecting the export of grain and minor bulk cargoes from the Americas to Asia. The affected routes saw a 31% increase in voyage distances for completed voyages, a 25% decrease in cargo volume and a 1% increase in tonne-mile demand.

In 2024, the rate of increase in dry bulk cargoes, which totalled 5.7 billion tonnes, was 3.3% compared to the previous year.

The increase in major bulk cargoes has been steady over the years, except for some exceptional periods. Major bulk cargoes increase by 3.2% to 3.5 billion tonnes in 2024, while minor bulk cargoes increase by 3.4% to 2.3 billion tonnes (**Table 2.9**).

Table 2.9 Development in Major and Minor Bulk Cargoes (million tonnes)[33]

Years	2022	2023	2024	23/24
Major spillages	3.222	3.383	3.491	3,2%
Minor spillages	2.081	2.176	2.251	3,4%
Total dry bulk cargo	**5.299**	**5.559**	**5.742**	**3,3%**

[32]UNCTAD, RMT, 2024
[33]Clarkson Research

As mentioned, seaborne transports of iron ore, one of the three major dry bulk cargoes and the most important input of the iron and steel industry, increased by 4.7% in 2023 and reached 1.5 billion tonnes after a decline in 2022. Finally, in 2024, the increase was 3.2%, reaching 1.6 billion tonnes.

On the other hand, global coal transports increased by 4.6% to 1.4 billion tonnes, while cereals increased by 1.7% to 532 million tonnes (**Table 2.10**).

Table 2.10 Development of major bulk cargoes (million tonnes)[34]

Years	2022	2023	2024	23/24
Iron Ore	1.478	1.547	1.596	3,2%
Coal	1.228	1.303	1.363	4,6%
Grain	516	523	532	1,7%

Global coal demand is expected to decline, especially in developed economies that are transitioning to cleaner energy sources. However, some developing countries will continue to produce and consume coal due to cost effectiveness and impossibilities. Therefore, demand may remain stable or even increase in some Asian countries in the short term. Coal prices are likely to remain under downward pressure due to reduced demand and increased competition from cleaner energy sources. However, supply chain disruptions may lead to short-term price increases. Reduced demand and regulatory pressures will reduce coal trade, especially in Europe and North America. However, continued utilisation in some developing countries will maintain the base level of trade.

Unlike major bulk cargoes, minor bulk cargoes consist of a wide variety of cargoes. For this reason, it is much more appropriate to present these cargoes by grouping them. These products and product groups can be analysed in Table 2.11. The tonnage change in the amount of minor cargo between 2022-2024 can be seen in the table.

In total, minor dry bulk cargoes increased by 3.4% in 2024 compared to the previous year and reached 2.3 billion tonnes. In 2024, metals will be the most transported cargo group among minor bulk cargoes with more than 1 billion tonnes, followed by fertilisers with 205 million tonnes and agricultural bulk cargoes consisting of soybean meal, oilseeds and rice with 202 million tonnes.

[34]Clarkson Research

Table 2.11 Minor bulk cargoes (million tonnes)[35]

Minor Pourings	2022	2023	2024	23/24
Raw Sugar	41	40	43	7,5%
White Sugar	27	26	26	0,0%
Total Sugar	**68**	**66**	**69**	**4,5%**
Soya meal	64	60	65	8,3%
Oilseeds (Processed)	53	60	59	-1,7%
Rice	57	54	59	9,3%
Total Agricultural Bulk	**192**	**193**	**202**	**4,7%**
Urea	54	55	55	0,0%
Potassium	41	46	51	10,9%
Sulphur	31	32	35	9,4%
Phosphate rock	25	26	28	7,7%
Processed phosphate	30	35	35	0,0%
Total Fertiliser	**182**	**193**	**205**	**6,2%**
Kok	28	27	28	3,7%
Petcoke	76	74	75	1,4%
Bauxite	162	170	192	12,9%
Alumina	35	36	36	0,0%
Scrap	96	93	91	-2,2%
Manganese ore	44	45	43	-4,4%
Anthracite coal	32	35	31	-11,4%
Cement	144	139	134	-3,6%
Salt	60	54	56	3,7%
Nickel	47	50	56	12,0%
Copper	38	39	39	0,0%
Stone & Aggregates	159	165	163	-1,2%
Other metals and minerals	**105**	**104**	**114**	**9,6%**
Total Metals and Minerals	1,026	1,031	1,058	2,6%
Steel products	361	378	395	4,5%
Forest products	317	316	322	1,9%
Total Industrial Product	**678**	**694**	**717**	**3,3%**
Total Minor Castings	**2.145**	**2.176**	**2.251**	**3,4%**

Some specific bulk trade segments (iron ore, grain and minor bulk cargoes) are expected to perform differently in 2025. Ongoing infrastructure development projects in developing countries and industrial expansion in emerging economies are expected to sustain demand for bulk materials. Iron ore trade, whether measured in tonnes or tonne-miles, is likely to continue to grow, supported by strong demand from steel producers, particularly in Asia. Small-volume commodities such as steel and forest products are expected to grow steadily, supported by construction and manufacturing activity in developing countries. Trade in cereals, on the other hand, is likely to grow moderately, fuelled by rising global food demand and population growth.

[35]Clarkson Research

2.3. Container trade

In 2024, container transports by sea increased by 5.5% and reached 212 million TEU.

In terms of routes, an increase was observed on all routes. The main East-West routes generally carry the largest trade flows, with cargo carried on these routes representing more than 36% of global container trade volume. The increase was 6.9% on the Trans-Pacific, Far East-Europe and Transatlantic routes, which are defined as the main maritime trade routes. With this increase, the containers carried on these routes increased from 58 million TEU in 2023 to 62 million TEU in 2024. All of these main routes are East-West routes. In the North-South direction container routes, the container volume reached 59 million TEU with an increase of 3.5%. In 2024, the increase in inland transports, especially in the China Sea, was 4.7%, with a total volume of 90 million TEU. The transshipment rate in these transports is quite high (**Table 2.12**).

Table 2.12 Container transport shares by routes (million TEU))[36 37]

Routes	2022	2023	2024	23/24
Main Lines	59	58	62	6,9%
North-South Lines	54	57	59	3,5%
Inland Regions/Other	87	86	90	4,7%
Total	**199**	**201**	212	5,5%

Improving economic prospects and the diversion of vessels away from the Red Sea are factors supporting the strong performance of container trade in 2024. The increase in cargo follows declining volumes in 2022 and low growth in container trade in 2023. The re-routing of vessels due to disruptions in the main transit channels has improved the balance between supply and demand for container transport, leading to increased earnings and profits for carriers and higher costs for shippers (**Figure 2.9**).

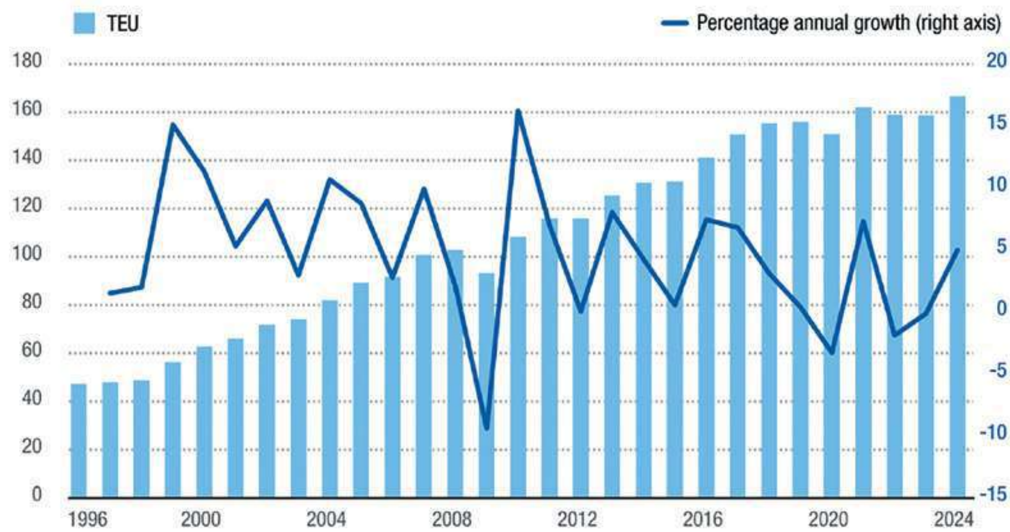


Figure 2.9 Global container trade

[36]Clarkson Research
[37]2023 data are estimates

Among the main routes, the Far East-Europe Line was the only main route that contracted between 2023 and 2024. In contrast, the main routes with the most dynamic performance in the 2023-2024 period were the Trans-Pacific West Line (North America to East Asia) and the Transatlantic West Line (Northern Europe and Mediterranean to North America). The main drivers of this growth are declining consumer inflation and the fall in retail inventories in the United States, which were previously high (**Table 2.13**).

Table 2.13 Cargo flow on main trade routes (full containers, million TEU)

	TransPacific			Asia-Europe			TransAtlantic		
	East Asia -America	America-East Asia	Total	Europe-Far East	Far East-Europe	Total	North America-Europe	Europe-North America	Total
2017	18.8	8.0	26.8	8.2	15.1	23.3	3.2	4.7	7.9
2018	20.1	8.1	28.2	8.3	15.9	24.2	3.3	5.0	8.3
2019	19.5	7.6	27.0	8.5	16.1	24.6	3.2	5.2	8.3
2020	20.0	7.4	27.4	8.2	15.5	23.7	2.7	5.0	7.7
2021	23.8	6.4	30.2	7.8	17.0	24.8	2.7	5.6	8.4
2022	22.6	6.0	28.6	6.7	15.8	22.5	2.6	5.5	8.1
2023	20.8	6.2	27.0	6.5	16.3	22.8	2.5	4.9	7.5
2024	21.7	6.9	28.5	6.9	16.1	23.0	2.6	5.3	7.9

Trade data already show various changes. For example, political proximity (i.e. having similar geopolitical stances) has become more important for trade since late 2022 (although it tends to decline in 2024). Four major bilateral trade relationships - Brazil-China; Russian Federation-China; United Kingdom-European Union; and Vietnam-China - show increasing trade intensification. In this context, the following current key container routes are critical:

•China and emerging markets such as Brazil, India and the Russian Federation: China's strong export performance is the main driver of growth along these routes and to these regions.

•Other intra-regional and South-South routes, reflecting a wider diversification of trade links beyond the traditional North-South links: Trade from the Far East to emerging economies made a significant contribution to containerised trade volume growth in 2024. In May 2024, Far East-Latin America and Far East-Middle East and Indian subcontinent volumes increased, driven by favourable economic trends in these regions and strong exports from China.

The performance of the container trade sector depends on geopolitical developments, the reduction of disruptions at key points and supply chain restructuring trends. As mentioned earlier, container trade is expected to grow steadily in the near term.

In recent years, the COVID-19 pandemic, the 2021-2022 crisis in global logistics, rising geopolitical tensions, rapid technological advances and increasing sustainability demands have necessitated the restructuring of supply chains. Geopolitical tensions have prompted countries to reconsider their dependence on foreign suppliers and seek regional trade relations. Technological advances such as automation and digitalisation are reshaping production processes, reducing the need for labour-intensive operations and positioning production closer to end markets. In addition, sustainability demands are creating pressure for greener supply chains by encouraging a shift towards renewable energy and environmentally friendly production methods.

All these restructuring efforts are changing trade patterns as global value chains become less complex and more regionally oriented and less dependent on overseas production facilities. Trade flows are increasingly shifting towards regional centres, creating new trade routes and networks that prioritise trade closer to home and with "friends" (friend-shoring) over traditional cost-driven offshoring models. As a result, trade patterns are becoming more fragmented, with intra-regional trade increasing in regions such as Asia and North America. This shift could affect containerised trade routes and volumes, potentially reducing long-distance transport needs and increasing regional trade.

2.4. Liquid Loads

Liquid bulk cargo transport, which has the highest share in maritime transport after dry cargo, reached a total of 3.9 billion tonnes in 2023 with an increase of 2.4%, while it remained at the same amount in 2024. Crude oil and petroleum products decreased by 1.3% and 0.2%, respectively, while gases and chemicals increased by 3.3% and 2.7% (**Table 2.14**).

Table 2.14 Tanker transport (million tonnes)[40]

Liquid Loads	2022	2023	2024	23/24
Crude Oil	1.938	1.988	1.963	-1,3%
Petroleum Products	1.050	1.065	1.063	-0,2%
Gases	534	552	570	3,3%
Chemicals	369	375	385	2,7%
Total	**3.891**	**3.980**	**3.981**	**0,0%**

Crude oil transport has the highest tonnage share among liquid bulk cargoes with 1.9 billion tonnes. After crude oil, the second most transported liquid bulk cargo is refined petroleum products with around one billion tonnes.

Global oil supply is expected to remain relatively stable, with modest increases resulting from investments in new production capacity in the Organisation of the Petroleum Exporting Countries (OPEC) and non-OPEC countries. Oil demand is projected to peak around 2028 and then decline as improvements in energy efficiency and the transition to electric vehicles accelerate. However, demand will continue to increase in the short term, especially in emerging economies. Increased production and stable demand will likely support stable trade volumes, but geopolitical risks and market dynamics may create uncertainty in trading conditions.

Liquefied gas transports consisting of LPG and LNG continued its steady increase for many years. Of the total 570 million tonnes of gases, 411 million tonnes are LNG and 134 million tonnes are LPG. The increase in LNG transported by sea will be 5% in 2024, while LPG will increase by 2%.

The other liquid bulk group, chemicals, carried a total of 385 million tonnes in 2024, including organic (about 144 million tonnes), inorganic chemicals (about 45 million tonnes), oils (about 88 million tonnes), lubricants (about 35 million tonnes) and other chemicals consisting of products such as asphalt, bitumen, biodiesel, molases and ethanol, carried about 70 million tonnes.

At this point, natural gas (LNG), which has been increasing steadily, is particularly noteworthy. Natural gas demand is projected to grow steadily due to its role as a transition fuel in the transition from coal to cleaner energy sources. Natural gas supply is expected to expand, particularly from the Russian Federation, the United States and the Middle East. Investments in LNG infrastructure will support supply growth. On the other hand, regional market dynamics, infrastructure developments

[38]Friendshoring is a supply chain strategy in which businesses source or produce goods in countries with shared values. These values can include political stability, economic practices and cultural standards. The aim is to work with trusted allies rather than risky partners.
[39]Offshoring is when a company outsources its business to another country. This can include tasks such as production, customer service or administrative work. The aim is to save money by using lower-cost labour.
[40]UNCTAD, RMT, 2024

and geopolitical factors affect natural gas prices. In addition, expanding LNG infrastructure and increasing demand may improve global gas trade, with new markets emerging in Asia and Europe. Competitive pricing is expected to lead to higher transaction volumes.

2.5. Cruise Sector

The cruise industry has witnessed remarkable growth and transformation over the last decade. According to the Cruise Industry Report published by the International Cruise Lines Association in May 2024, the number of passengers carried on cruise lines in 2023 exceeded 31.7 million. The regional breakdown of the countries from which these passengers travelled can be seen in Figure 2.10. As can be seen, there is a strong interest in this tourism especially in North America.

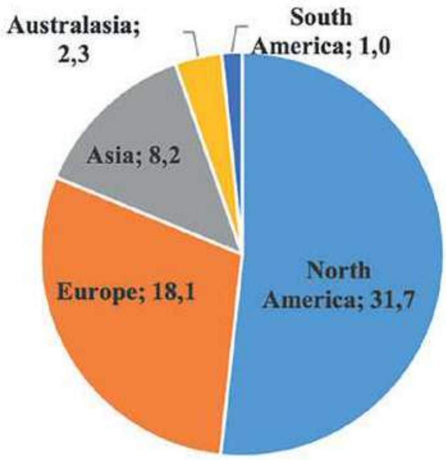


Figure 2.10 Regional distribution of cruise passengers (Million Passengers)

Passengers who prefer cruise tourism are mainly US citizens. In 2023, a total of 17 million people preferred this tourism, followed by Germany with 2.5 million passengers, the United Kingdom with 2.2 million passengers, Australia with 1.2 million passengers, Canada and Italy with 1 million passengers. Recently, interest in this tourism has been increasing especially in Brazil, Italy and the United Kingdom.

Cruise passenger numbers are expected to reach 40 million passengers by 2028. In parallel with this development, ship capacity is expected to increase by 10% and reach 745 thousand passengers.

Cruise tourism is a global sector with cruise lines operating in every region of the world. The most concrete indicator of this is the regional distribution of the sector shown in **Figure 2.11**.

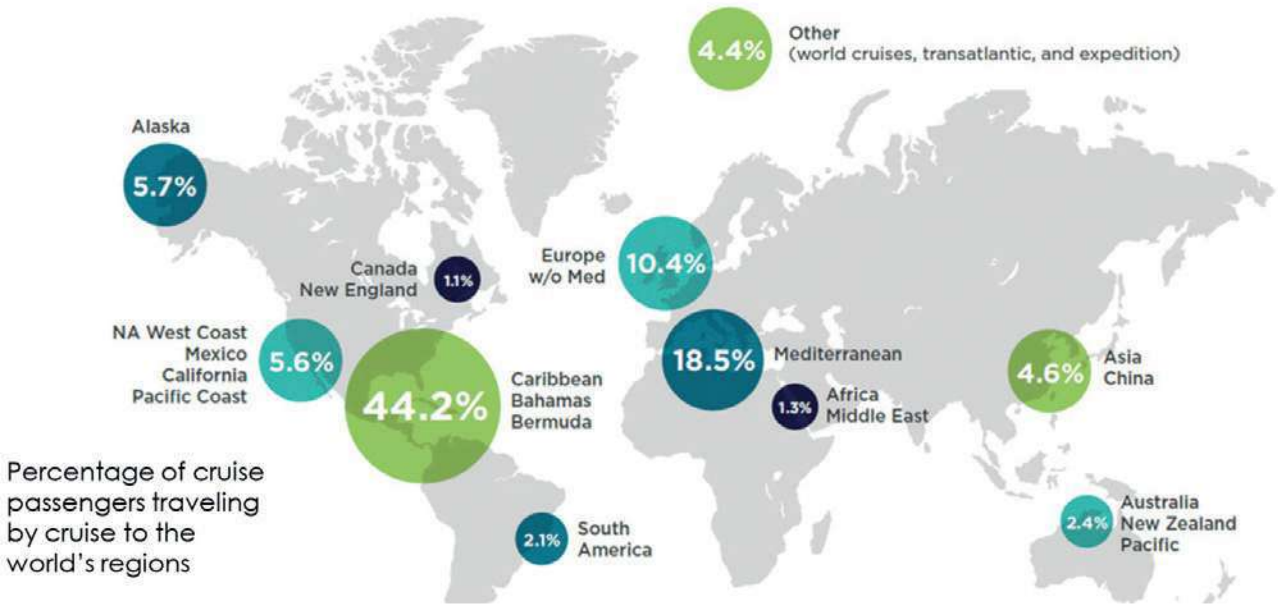


Figure 2.11 Regional distribution of cruise passengers (%)

As can be seen, the Caribbean/Bahamas and Bermuda region is a very popular destination, with a total of 12.9 million passengers visiting this region in 2023. This region was followed by the Mediterranean with 5.5 million passengers, Europe (excluding the Mediterranean) with 3 million passengers, Asia/China with 2.6 million passengers and Alaska with 1.7 million passengers.

Emerging Trends in the Cruise Industry

As environmental concerns increase, the cruise industry is adopting innovative solutions to minimise its carbon footprint while promoting tourism. Major sustainability initiatives include:

- Transition to cleaner energy sources: LNG-powered cruise ships are becoming increasingly common.

- Shore power facilities: Shore power connections are implemented to reduce emissions during berthing.

- Advanced waste management systems: Cruise ships are improving on-board recycling and waste treatment.

- Water conservation and treatment: New technologies allow ships to treat and reuse water more efficiently.

- Net-zero emissions commitment: The cruise industry aims to achieve net-zero carbon emissions by 2050.

The cruise industry continues to demonstrate flexibility and innovation, adapting to changing passenger preferences while improving sustainability and economic growth. With strong passenger demand, new technological developments and environmentally friendly investments, the industry can be expected to gain significant growth momentum in the coming years.

2.6. Developments in the World Port Sector

The world's leading ports and the ports in our immediate region are examined under this heading.

2.6.1. Developments in Major Ports

Since many ports did not disclose their 2024 data as of February 2025, when the report was written, Table 2.15. presents the 2023 data of the ports handling the most cargo in the world. In 2023, Ningbo-Zhoushan port alone handled approximately 5% of the total cargo handled in the world and maintained its title of being by far the port handling the most cargo with 1.3 billion tonnes. In 2024, the port increased its total handling to 1.37 billion tonnes (**Table 2.15**).

Table 2.15 Top 10 ports in the world according to the amount of cargo handled (million tonnes)[41]

	Harbour	Country	2021	2022	2023	23/24
1	Ningbo-Zhoushan	China	1.224,1	1.262,3	1.320,0	4,6%
2	Tangshan	China	722,4	768,9	842,2	9,5%
3	Shanghai	China	769,7	727,8	754,0	3,6%
4	Guangzhou	China	623,7	656,0	675,0	2,9%
5	Qingdao	China	630,3	657,5	660,0	0,4%
6	Suzhou	China	565,9	572,8	598,6	4,5%
7	Singapore	Singapore	599,6	578,2	591,7	2,3%
8	Rizhao	China	541,2	570,1	552,0	-3,2%
9	Port Hedland	Australia	553,3	566,2	540,0	-4,6%
10	Busan	South Korea	442,5	425,0	492,0	15,8%
11	Yantai	China	423,4	462,6	485,0	4,8%
12	Tianjin	China	529,5	549,0	445,0	-18,9%
13	Rotterdam	Netherlands	468,7	467,4	438,8	-6,1%
14	Beibu Gulf	China	358,2	371,1	380,4	2,5%
15	Taizhao	China	352,9	364,4	379,7	4,2%

In 2023, the port of Tangshan increased its cargo by 9.5%, while the increase in Shanghai was 3.6%. The cargo volumes handled at these ports are 842 and 754 million tonnes respectively.

Eleven of the ports ranked in the top 15 are Chinese ports. Ports other than China in the top 15 are Singapore port ranked 7th with 591 million tonnes, Port Hedland ranked 9th with 540 million tonnes, Busan port ranked 10th with 492 million tonnes and Rotterdam port ranked 13th with 438 million tonnes. Considering that all ports in our country handled approximately 500 million tonnes in the same year, a concrete idea can be obtained about how high the volumes of these ports are.

On the container side, according to Drewry data, total container handling at world ports increased by 0.3% to 865 million TEU in 2023. Asian ports account for 56% of the total global container handling with 485 million TEU. European ports are in second place with 132 million TEU, while North American ports are in third place with 70 million TEU (**Table 2.16**).

[41]Data compiled from various sources

Table 2.16 World container port handling data by region(*000 TEU)[42]

Regions	2021	2022	2023	23/24
Asia	463.288	472.015	485.020	2,8%
Europe	143.308	137.805	132.636	-3,8%
North America	77.332	77.881	69.709	0,7%
Middle East and South Asia	74.224	75.732	78.228	2,0%
Latin America	52.529	52.260	51.920	-0,5%
Africa	33.318	32.908	34.503	-1,2%
Oceania	13.758	14.797	13.838	7,6%
World	**857.757**	**863.398**	**865.854**	**0,3%**

Drewry forecasts an average annual growth of 2.7% in container volumes over the next five years to 2027, with total handling increasing from 866 million TEU in 2023 to 989 million TEU in 2027 (**Figure 2.12**).

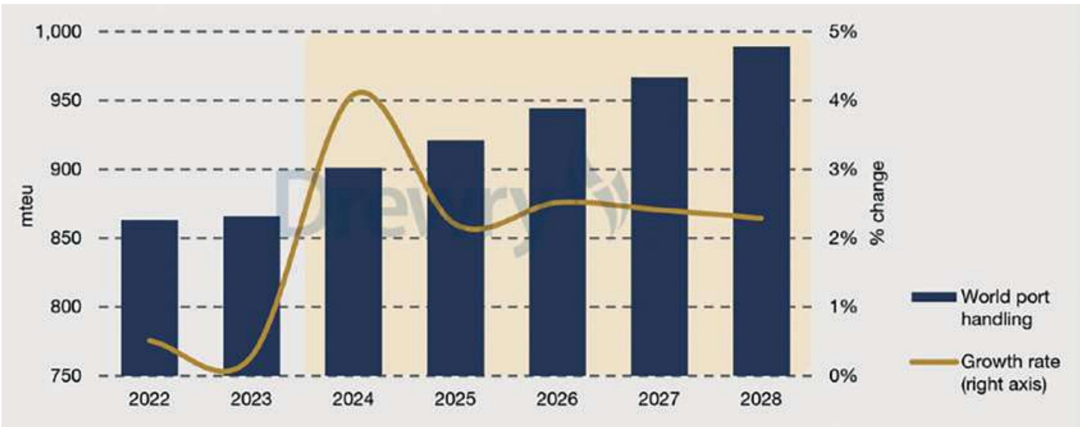


Figure 2.12 Drewry container handling projection[43]

[42]Drewry
[43]Drewry

Table 2.17 presents the top 30 ports that will handle the most containers in the world in 2024. Shanghai remains at the top with 51.5 million TEU, followed Singapore with 41 million TEU and Ningbo with 39 million TEU. With these data, Shanghai became the first port to cross the 50 million TEU mark.

Table 2.17 Ports handling the most containers (million TEU)[44]

	Port Name	2024	2023	2019	24/23	24/19
1	Shanghai	51.508.000	49.158.000	43.303.000	4,8%	18,9%
2	Singapore	41.124.045	39.012.950	37.195.636	5,4%	10,6%
3	Ningbo-Zhoushan	39.300.800	35.300.000	27.535.000	11,3%	42,7%
4	Shenzhen	33.398.600	29.880.000	25.771.700	11,8%	29,6%
5	Qingdao	30.847.000	28.770.000	21.010.000	7,2%	46,8%
6	Guangzhou	26.450.000	23.236.200	23.236.200	13,8%	13,8%
7	Busan	23.292.500	21.153.509	21.992.000	5,4%	6,0%
8	Tianjin	23.292.500	20.187.600	17.300.000	15,4%	34,6%
9	LA/LB	19.947.077	16.648.349	16.969.666	19,8%	17,5%
10	Dubai/Jebel Ali	15.536.000	14.473.000	14.111.000	7,3%	10,1%
11	Port Kelang	14.996.000	14.061.022	13.580.717	4,1%	7,8%
12	Rotterdam	14.858.000	14.446.709	14.080.184	2,8%	5,5%
13	Hong Kong	13.691.000	14.401.000	18.303.000	-4,9%	-25,2%
14	Antwerp-Bruges	13.517.000	12.500.000	11.860.204	8,1%	14,0%
15	Xiamen	12.255.700	12.553.700	11.122.180	-2,4%	10,2%
16	Tanjung Pelepas	12.253.309	10.480.537	9.077.485	16,9%	35,0%
17	Tanger Med	11.792.000	8.617.410	5.520.000	36,8%	113,7%
18	Laem Chabang	9.554.700	8.868.200	7.980.560	7,7%	19,7%
19	Kaohsiung	9.228.418	8.833.831	10.428.634	4,5%	-11,5%
20	Beibu Gulf	9.030.000	8.020.000	n.a.	12,6%	n,a,
21	NY/NJ	8.697.767	7.809.890	7.471.131	11,4%	16,4%
22	Ho Chi Minh City	n.a.	7.231.000	4.732.699	n,a,	73,9%
23	Mundra	8.323.000	8.314.000	6.848.465	0,1%	21,5%
24	Hamburg	7.825.000	7.755.000	9.282.012	0,9%	-15,7%
25	Colombo	7.792.069	6.949.912	7.228.337	12,1%	7,8%
26	Cai Mep	7.440.000	5.593.400	n.a.	33,0%	n,a,
27	Nhava Sheva	7.052.689	6.354.324	5.100.188	11,0%	38,3%
28	Jakarta	6.736.284	6.264.800	6.802.200	7,5%	-1,0%
29	Rizhao	6.710.700	6.260.000	4.520.000	7,2%	48,5%
30	Lianyungang	6.690.700	6.140.000	5.570.000	9,0%	20,1%

In 2023, 81% of the handling at container terminals was carried out by global terminal operators. CHINA COSCO was the global terminal operator handling the highest number of containers with a 12% market share with 106 million TEU, followed by PSA International with 95 million TEU and APM Terminals with 93 million TEU. Among the 21 global terminal operators, Yıldırım/YILPORT group, as a company of Turkish origin and a member of TÜRKLİM, ranks 16th in the list of global terminal operators consisting of 21 members with 7.1 million TEU reached in 2023 (Table 2.18). On the other hand, in the equity-based business volumes table of global terminal operators, Yildirim/YILPORT ranks in the top 10 with 8.7 million TEU according to 2023 data.

[44]Alphaliner

Table 2.18 Global terminal operators' throughput table (million TEU,%)[45]

	Operator	2022	2023	22/23	23 Pay
1	China Cosco Shipping	106,3	105,5	-0,8%	12.3%
2	PSA International	90,7	94,7	4,4%	10.5%
3	APM Terminals	93,2	92,9	-0,3%	10.8%
4	Hutchison Ports	82,2	80,1	-2,6%	9.5%
5	DP World	77,1	79,6	3,2%	8.9%
6	MSC Group (incl. TIL & AGL)	65,1	70,7	8,6%	7.5%
7	China Merchants Ports	36,7	38,1	3,8%	4.3%
8	CMA CGM	33,7	35,3	4,7%	3.9%
9	ICTSI	13,6	13,4	-1,5%	1.6%
10	SSA Marine	13,0	12,0	-7,7%	1.5%
11	Eurogate	11,3	10,7	-5,3%	1.3%
12	HMM	10,4	10,1	-2,9%	1.2%
13	Evergreen	11,2	10,1	-9,8%	1.3%
14	Adani	7,3	8,9	21,9%	0.8%
15	MOL	8,4	7,7	-8,3%	1.0%
16	Lightning/YILPORT	6,7	7,1	6,0%	0.8%
17	Wan Hai	6,9	6,6	-4,3%	0.8%
18	NYK	5,6	4,6	-17,9%	0.6%
19	Yang Ming	4,8	3,9	-18,8%	0.6%
20	Hapag-Lloyd	2,7	3,6	33,3%	0.3%
21	AD Ports Group	3,3	3,6	9,1%	0.4%
	KTO Total	**690,3**	**699,1**	**1,3%**	
	World Total	**863,4**	**865,9**	**0,3%**	
	KTO Share	**80,0%**	**80,7%**		

In March 2025, BlackRock and Terminal Investment Limited (TIL) Consortium reached an agreement worth USD 22.8 billion to acquire the international port and terminal operations of CK Hutchison. With this development, significant changes are expected to take place in **Table 2.18** and competition among global terminal operators is expected to move to a different dimension.

When the 15 port facilities that will handle the highest number of containers in Europe and our immediate region in 2024 are analysed; it is seen that the port of Rotterdam maintains its place at the top of Europe with a 2.5% increase in cargo and 13.8 million TEU handling, followed by the port of Antwerp, which handled 13.5 million TEU with an 8.1% increase in cargo. Hamburg port, which handled 7.8 million TEUs, ranked 3rd in Europe.

In the Mediterranean, the port of Valencia, which handles 5.5 million TEU with a significant cargo increase of 14% in 2024, takes the lead, followed by Algeciras and Piraeus ports with 4.7 million TEU. While Ambarlı ranked 11th with 3 million TEU, Asyaport, which made a significant breakthrough in 2024, rose to 15th place with 2.1 million TEU (**Table 2.19**).

[45]Drewry

Table 2.19 Top 15 container handling ports in Europe (*000 TEU)[46]

	Harbour	2020	2021	2022	2023	2024
1	Rotterdam	14.349	15.300	14.455	13.477	13.820
2	Antwerp	12.023	12.020	13.484	12.515	13.528
3	Hamburg	8.527	8.715	8.270	7.700	7.800
4	Valencia	5.415	5.614	5.076	4.804	5.476
5	Algeciras	5.106	4.749	4.763	4.733	4.706
6	Piraeus	5.437	5.317	5.000	5.100	4.702
7	Bremerhaven	4.770	5.019	4.572	4.181	4.486
8	Gioia Tauro	3.193	3.147	3.370	3.549	3.940
9	Barcelona	2.958	3.531	3.522	3.280	3.886
10	Le Havre/Rouen	2.445	3.070	3.100	2.630	3.122
11	Ambarli	2.882	2.737	2.870	3.190	3.016
12	Marsaxlokk	2.440	2.970	2.890	2.800	2.857
13	Genoa	2.353	2.558	2.799	2.741	2.821
14	Gdansk	1.928	2.118	2.073	2.051	2.242
15	Asyaport	1.438	1.803	1.797	1.719	2.098

On the other hand, the container volumes of the countries within the Black Sea have decreased significantly due to the impact of the war. Before the war, i.e. in 2021, the total container handling volume in the countries located on the Black Sea coast, excluding Türkiye, increased up to 3.1 million TEU (including one million TEU in Ukraine), while in 2022, there was a significant contraction in the volume with decreases of up to 85%, especially in Ukrainian ports. The contraction in Ukrainian ports is still continuing. While 153 thousand TEU was handled in 2022, this amount decreased by 57% to 66 thousand TEU in 2023. However, a recovery trend is observed in other countries.

According to 2023 data, Russia's container terminals in the Black Sea completed the year by exceeding the 1 million TEU limit with an increase of 33.4%, followed by Romania with a 15% increase in cargo and 807 thousand TEU handling and Georgia with a 47% increase in cargo and 701 thousand TEU handling. In 2023, containers handled in the Black Sea countries other than Türkiye increased by 22% in total and reached 2.9 million TEU (**Table 2.20**).

Table 2.20 Development of container handling in the Black Sea countries (TEU)

Country	2022	2023	22/23
Russia (KD)	750.586	1.000.941	33,4
Romania	701.948	807.344	15,0
Georgia	476.482	701.441	47,2
Bulgaria	254.457	281.637	10,7
Ukraine	153.093	65.819	-57,0
Total	**2.336.566**	**2.857.182**	**22,3**

In the following sections of the report, ship performance indicators in ports published by UNCTAD as well as the current status of port connectivity indices will be discussed.

[46]Theo Notteboom

2.6.3. Ship Performances in Ports[47]

Increased port calls of ships means increased trade. Towards the end of 2023, changes in transport routes and longer distances travelled by ships started to play an important role . This has led to more port calls to meet operational needs, capitalise on economic opportunities and improve logistics.

Container ship calls at ports around the world recovered strongly in 2023, reaching record levels. In addition, calls of tankers and cruise ships also increased. After a decline in calls in 2021 and the first half of 2022, container ships' port calls rose to around 250,000 in the second half of 2023. This represents an average increase of 10% compared to the previous year.

Similarly, port calls of tankers continued to increase throughout 2023, increasing by 5% in the first two quarters and 1% in the last two quarters compared to the same periods of 2022. Port calls of dry bulk carriers remained at similar levels to 2022 (**Figure 2.13**).

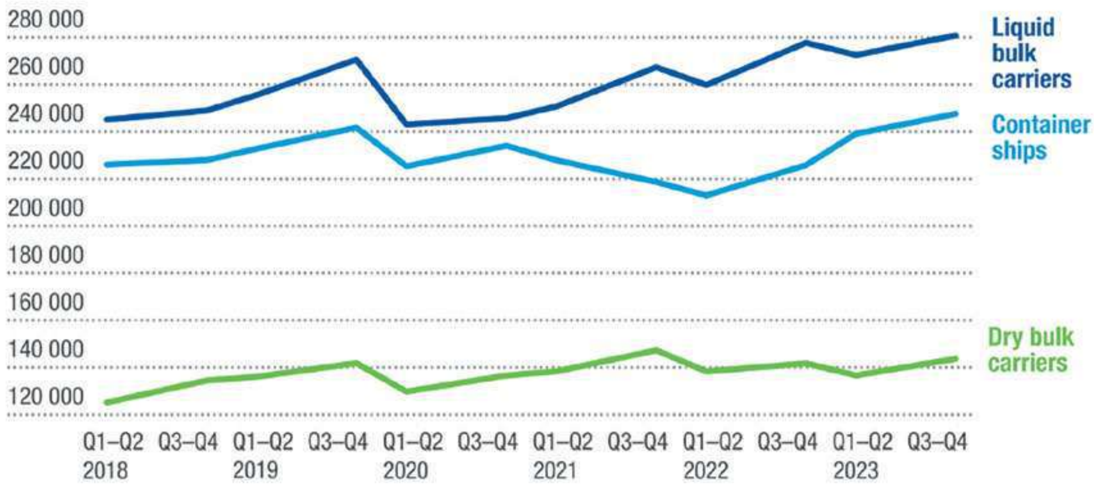


Figure 2.13 Port times by vessel types (world median, days)

Port congestion and logistical disruptions eased in 2023, with improved vessel dwell time and cargo handling performance.

Consolidated data for 2024 are not yet available, but there are concerns that service diversions due to disruptions in the Red Sea and Panama Canal could trigger a new wave of congestion. In particular, ports in Singapore and the Western Mediterranean are facing increasing demand for transhipment services.

In 2023, the average time spent in ports by container ships and dry bulk carriers returned to pre-pandemic levels with 0.7 days in the first half of the year and 1.1 days in the second half of the year. The trend for tankers followed a stable course and remained just under 1 day, similar to the average of the last three years.

Port times for dry bulk carriers improved in both halves of 2023, reaching 2.2 and 2.1 days, but these times have not yet reached the times observed in 2019 (**Figure 2.14**).

[47] UNCTAD Data

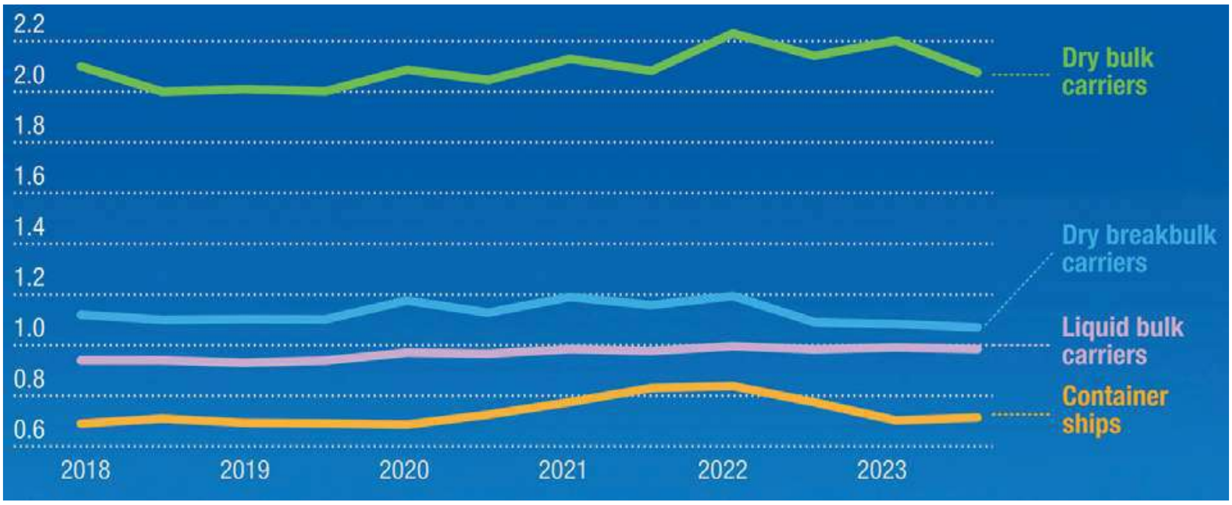
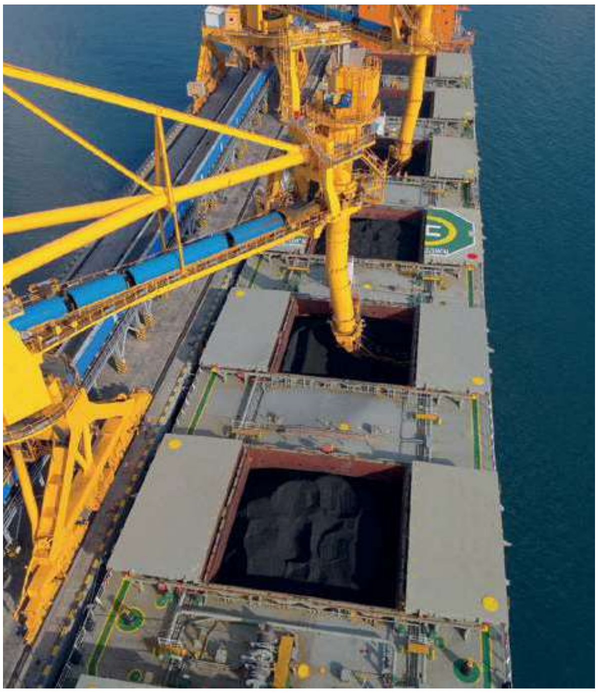


Figure 2.14 Average port times by vessel types (Days, Median)

Port congestion time can be defined as the time it takes for a ship to berth at a quay from the moment it anchors in the port's anchorage area. Developed countries were more affected by disruptions in 2021 and 2022, but were able to reduce the waiting time to around 5 hours in early 2023. This is slightly higher than the times observed in 2020 and earlier years. The congestion effect in developing countries was weaker. In the first few months of 2024, there is a further increase in waiting times, reaching around 10 hours in July 2024. These times are about 5 hours in developed countries. The waiting times for container ships can be analysed in **Figure 2.15**.

Figure 2.15 Average waiting times of container ships at ports
(Average waiting hours for each month)

In the next section of the report, the current values of the Liner Service Maritime Transport Port Connectivity Index will be discussed.



2.7. Türkiye in Liner Service Maritime Transport Port Connectivity Index (LSCI)[48]

The purpose of the LSCI is to measure the level of integration in liner service shipping port connections. The index makes measurements at both country and port level. The index can be considered as an indicator of access to global trade through the maritime transport network. High values of the index indicate the presence of high-capacity and frequent maritime transport, and also mean efficient involvement in international trade. While calculating the index, 5 basic elements are taken into account:

- **Scheduled Ship calls:** Number of vessels calling on a weekly basis. Import, export and transit cargoes are processed in these calls. If the transit density is high, these vessel calls are not taken into consideration for the global trade system and the port is shown as a transit cargo centre. Nevertheless, it is accepted that import and export services exist in these ports.

- **Commissioned Capacity:** While the issue mentioned in the previous item is related to the frequency of calls of the ships, the capacity allocated for these ships is another measurement element. A high capacity increases the trade potential with global markets.

- **Number of Shipping Companies:** It is a measure of the number of maritime transport companies serving a particular country and port.

- **Average Ship Size:** There are very few ports in the world serving ships of 10 thousand TEU and above. The call of large-scale ships is an important indicator for economies of scale and means low transport costs for each TEU.

- **Directly Connected Ports:** This measure shows the number of ports that are directly connected with the ship voyages. Since there is no transshipment between these ports, a stronger commercial mechanism can be established commercially.

For the measurements made within the scope of the index, the value of 2006 was accepted as 100. In this way, a reference value was obtained for the comparison of the following years. Naturally, countries with high index values are those that are actively involved in international trade. For example, China and Hong Kong rank first among export-oriented economies, while Singapore ranks first in the transshipment centre ranking. The United Kingdom, Germany, South Korea, the United States and Japan are among the top 15 countries in the index ranking, while Malaysia, Spain, UAE, Egypt and Oman are among the important transshipment centres.

[48]Liner Shipping Connectivity Indeks (LSCI)

Looking at the last quarter values for 2020-2024, Ambarlı has the highest index value, followed by Izmit Bay, Aliaga, Tekirdag and Mersin (**Figure 2.16**).

Index values are also shown in **Table 2.21.** Comparing the last quarter of 2023 with the last quarter of 2024, it is seen that there is a decrease in all port clusters except Tekirdag.

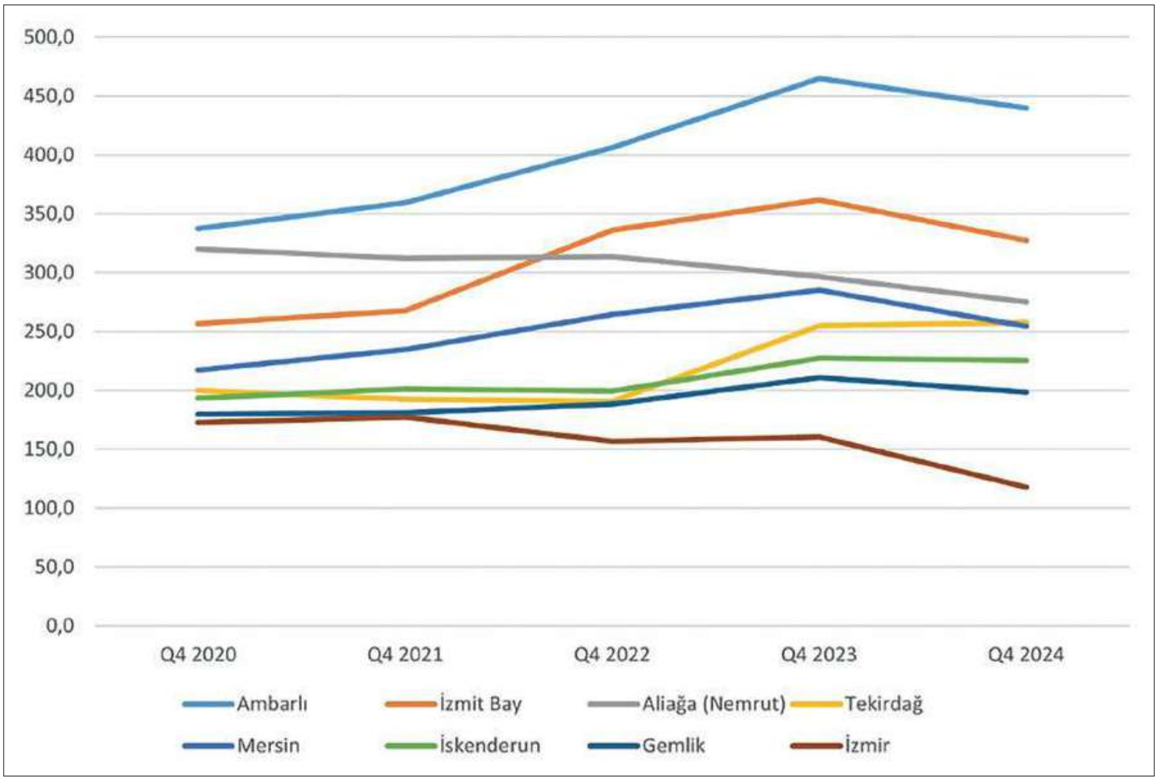


Figure 2.16 Türkiye Port Regions in Port Connectivity Index[49]

Table 2.21 LSCI values of important ports in Türkiye

Harbour Area	Q4 2020	Q4 2021	Q4 2022	Q4 2023	Q4 2024	2023 Q4 / 2024 Q4
Ambarli	337,8	359,6	406,5	465,1	439,8	-5,5%
Izmit Bay	257,0	267,8	336,1	362,1	327,3	-9,6%
Aliaga	320,0	312,3	313,5	296,8	275,0	-7,3%
Tekirdag	199,8	192,7	190,9	254,8	257,6	1,1%
Mersin	217,3	234,8	264,6	285,1	254,7	-10,7%
Iskenderun	193,6	201,4	199,3	227,6	225,5	-0,9%
Gemlik	179,7	181,1	188,5	211,2	198,5	-6,0%
Izmir	172,9	177,6	156,8	160,3	117,9	-26,5%

In the next section, the cargoes traded in the ports of our country are analysed in detail.

[49]https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92

CHAPTER 3

TURKISH SHIPPING SECTOR

CHAPTER 3: TURKISH SHIPPING SECTOR

3.1. Developments in Turkish Ports

Ports, as the key infrastructure of maritime transport, are directly influenced by national and international economic, political, and social developments. During periods of heightened safety and security concerns, not only the volume and patterns of cargo transported change, but also the trade routes. In 2024, there was no change in either the number of ports or the overall port capacity. However, cargo volumes at ports continued to grow, albeit modestly. Rising capacity utilisation due to increased cargo, coupled with a decline in port operators' investment appetite, may disrupt the supply-demand balance in the short to medium term.

As of today, data from the General Directorate of Shipyards and Coastal Structures indicate that there are 217 coastal facilities (including piers, buoys, dolphins, and platforms) serving maritime trade. 194 of these coastal facilities are actively serving international maritime transport.

Of these facilities, 87 (45%) are located in the Marmara Region, 49 (25%) in the Mediterranean Region, 32 (17%) in the Black Sea Region, and 26 (13%) in the Aegean Region.

On a provincial basis, 35 of the facilities actively serving maritime trade are located in Kocaeli province. There are 20 ports in Hatay, 18 ports in Izmir and 17 ports in Istanbul with different characteristics and sizes.

A total of 77 ports operating in our country are members of the Turkish Port Operators Association (TÜRKLİM). With its member ports operating across all regions and handling all types of cargo, TÜRKLİM plays a key role in shaping Türkiye's maritime sector. (**Figure 3.1**).

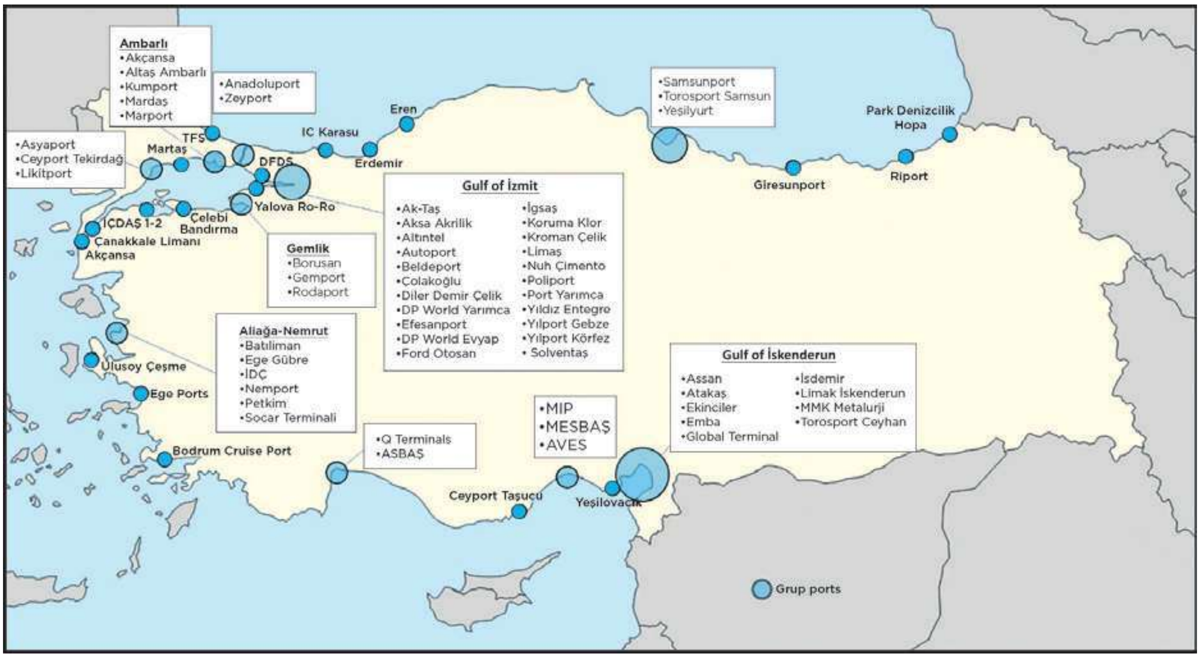


Figure 3.1 TÜRKLİM member ports operating on the Turkish coast.

In 2024, total cargo handled at Turkish ports increased by 10.6 million tonnes compared to the previous year, reaching 531,737,358 tonnes. Total loading and discharging volumes at Turkish ports increased by 6.4 million tonnes and 4.2 million tonnes, respectively.

Between 2015 and 2024, cargo loading at Turkish ports rose from 177 million tonnes to 224 million tonnes, while discharging increased from 239 million tonnes to 307 million tonnes (**Figure 3.2**).

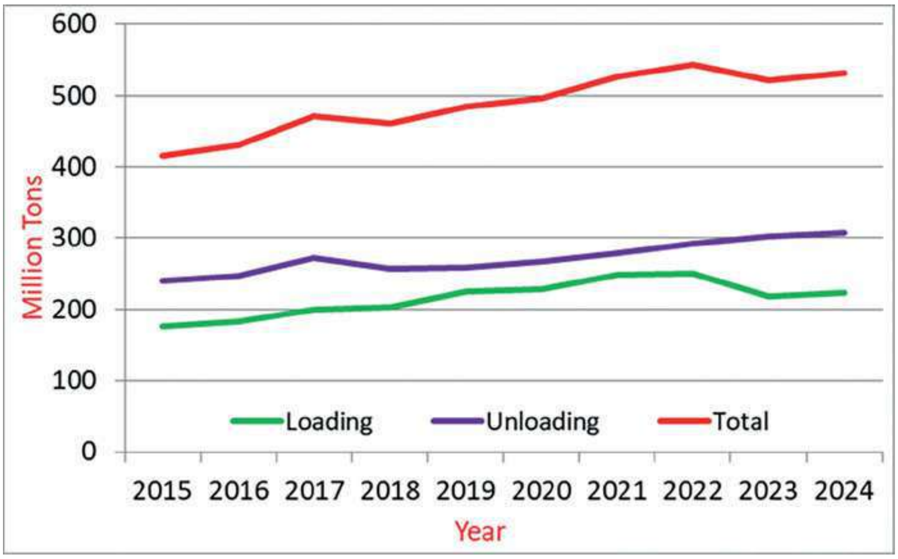


Figure 3.2 Cargo handled at Turkish ports over a ten-year period.

Changes in cargo handling volumes over 1-, 5-, and 10-year periods at Turkish ports have been analysed. Compared to the previous year (2023–2024), cargo loading at Turkish ports increased by 3%, unloading by 1%, and total cargo volume by 2%. In the short term (2020–2024), the greatest increase was observed in discharged cargo, which rose by 14.9%, while loading volumes declined by 2% over the same period. In the long term (2015-2024), loadings increased by 27%, unloadings by 28.4% and the total by 27.8% (**Figure 3.3**).

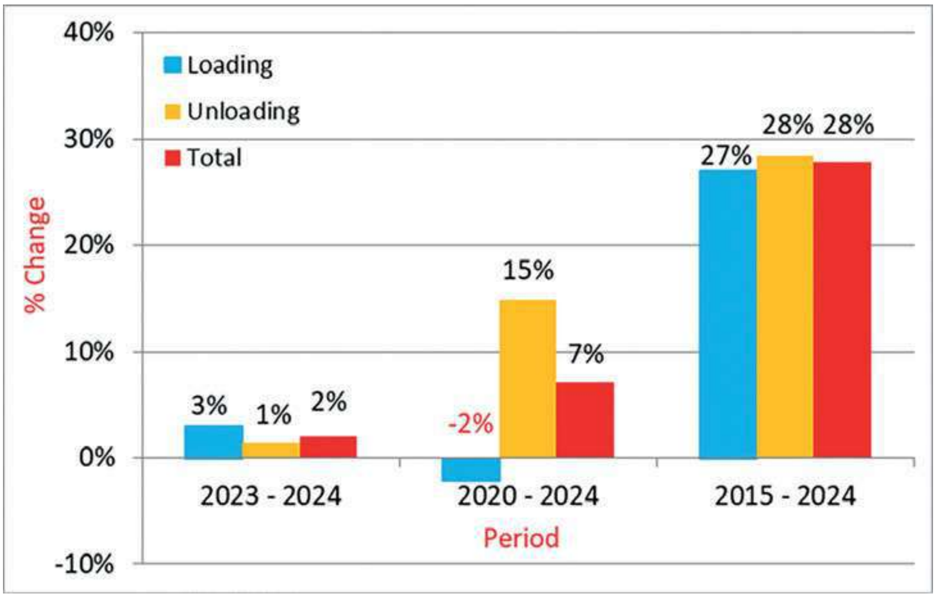


Figure 3.3 Rates of increase in cargo handled in 1, 5 and 10 years.

An analysis of cargo handled at Turkish ports by trade regime shows that 75.1% is related to foreign trade. As of 2024, the shares of transit and cabotage cargo were 13% and 11.9%, respectively (**Figure 3.4**).

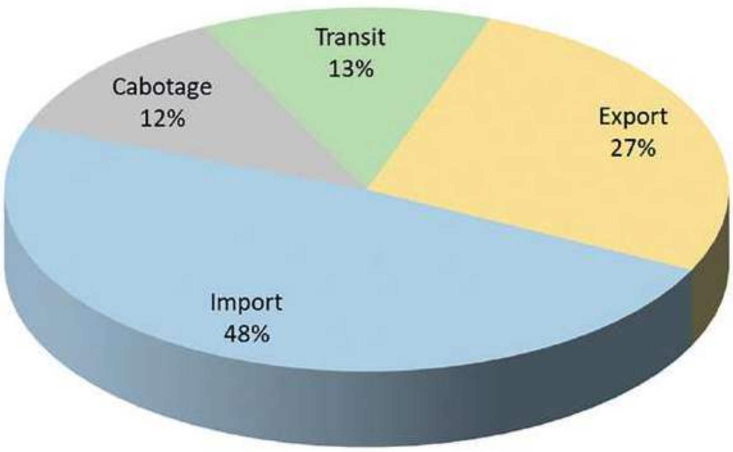


Figure 3.4 Distribution of cargo handled in our ports according to regimes.

In 2024, a total of 531.7 million tonnes of cargo were handled at Turkish ports, including 257.1 million tonnes of imports, 142.2 million tonnes of exports, 69 million tonnes of transit and 63.2 million tonnes of cabotage (**Table 3.1**).


MATRA
DIGITAL MARITIME SOLUTIONS
INTEGRATED PORT SURVEILLANCE AND SECURITY SYSTEM
INDOOR/OUTDOOR PERSONNEL TRACKING SYSTEM
REAL-TIME ASSET TRACKING SYSTEM
VIDEO ANALYTICS SYSTEM
CYBER SERVICES
AI-BASED NAVIGATION SYSTEM
ONBOARD CREW/PASSENGER SAFETY
UNMANNED AIR VEHICLES
SANCAR UNMANNED SURFACE VEHICLE
HAVELSAN

Table 3.1 Distribution of cargo handled in our ports according to regimes. *

Load Regime	2020	2021	2022	2023	2024
Imports	226.539.473	232.633.060	243.917.119	256.206.627	257.136.420
Export	138.902.823	153.763.658	150.172.902	135.510.681	142.278.137
Transit	72.402.972	78.008.944	81.018.986	66.735.403	69.064.361
Cabotage	58.797.384	61.901.122	67.501.276	62.627.093	63.258.440
Total	**496.642.652**	**526.306.784**	**542.610.283**	**521.079.804**	**531.739.382**

** General Directorate of Maritime Affairs-Department of Maritime Trade Development*

Over the past fifteen years, import cargo has shown the most significant increase. During the same period, transit and cabotage cargo volumes fluctuated within a narrow range (**Figure 3.5**)From

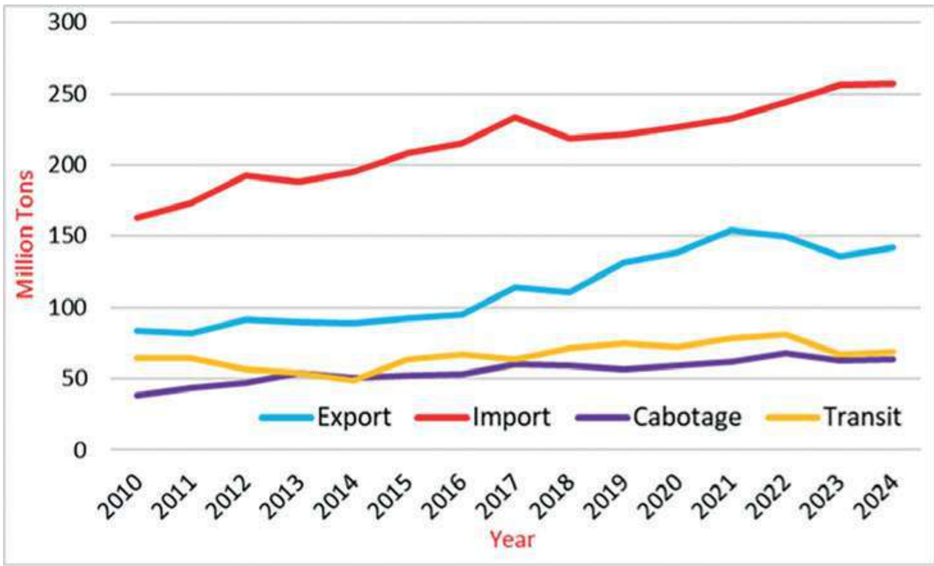


Figure 3.5 Development of cargo handled in our ports according to their regimes.

2023 to 2024, export cargo increased by 5%, transit by 3.5%, cabotage by 1%, and import cargo by only 0.4% at Turkish ports. Turkish ports recorded a total cargo increase of 2% in 2024 compared to the previous year. In the short term (2020–2024), import cargo showed the highest increase, rising by 13.5%. Import cargoes were followed by cabotage cargoes with 7.6% and export cargoes with 2.4%. In the short term, transit cargoes decreased by 4.6%. Total cargo volume rose by 7.1% between 2020 and 2024, driven primarily by increases in import and cabotage cargo. Over the medium term (2015–2024), export cargo experienced the highest growth, rising by 54.4%. This was followed by import cargo (23.4%), cabotage (20.6%), and transit cargo (9.5%). During this period, total cargo handled at Turkish ports increased by 27.8% (**Figure 3.6**).

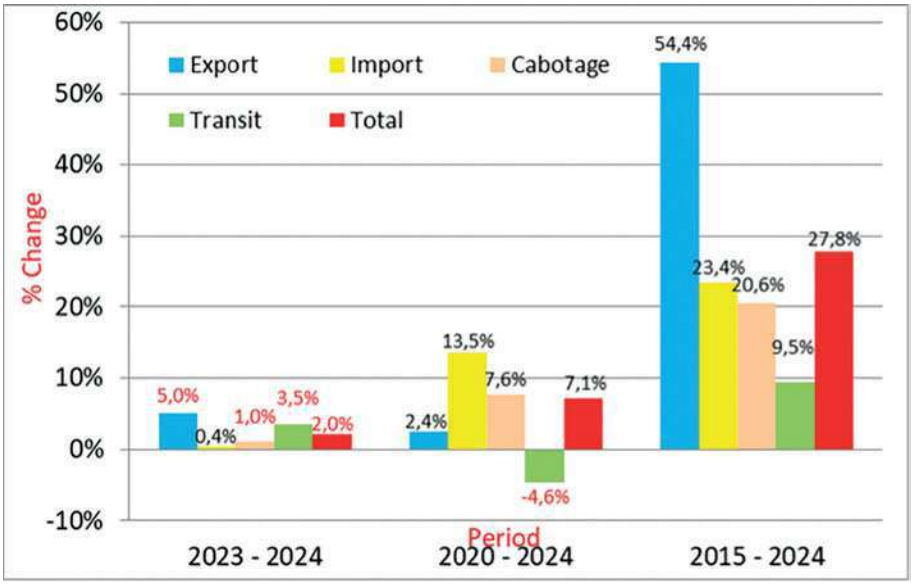


Figure 3.6 Development rates of cargo handled in our ports according to their regimes.

An analysis of annual cargo changes at Turkish ports by regime shows that the largest fluctuations occurred in transit and export cargo (**Figure 3.7**). During the analysed period, the highest year-on-year increase was in transit cargo, which rose by 28.6% in 2015. Conversely, the sharpest annual decline was also in transit cargo, falling by 17.6% in 2024.

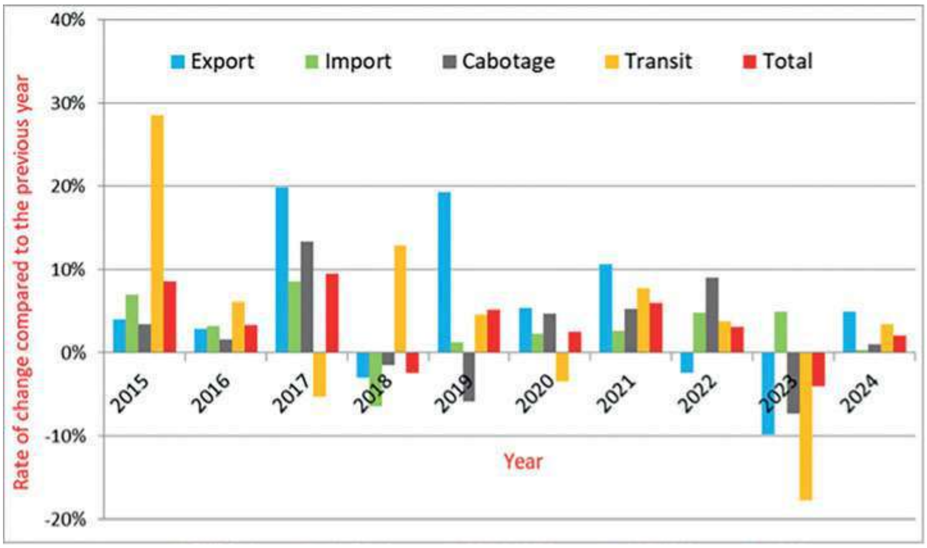


Figure 3.7 Change in the cargo handled in our ports compared to the previous year.

Since 2015, total cargo handled at Turkish ports has grown by 3.3% over ten years. Over the same ten-year period, export cargo grew by 4.9%, import cargo by 2.8%, transit cargo by 3.5%, and cabotage cargo by 2.3% (**Figure 3.8**).

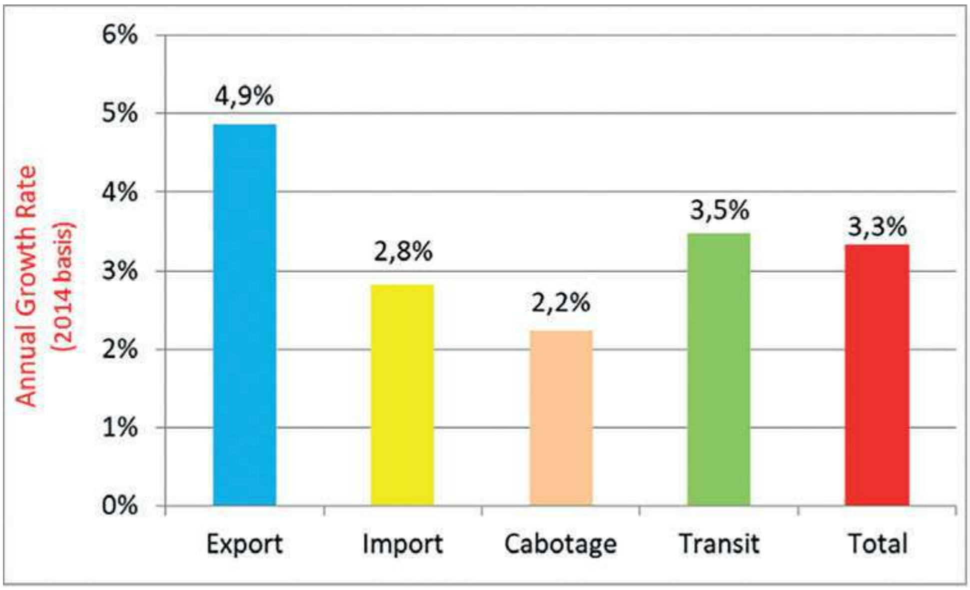


Figure 3.8 Ten-year growth rate of cargo handled in our ports.

According to 2024 data, 30% of the cargo handled at Turkish ports consisted of liquid bulk cargo. Solid bulk cargo accounted for 29%, followed by container cargo at 27%, and general cargo at 12%. As of 2024, Ro-Ro cargo represented just 2% of total tonnage (**Figure 3.9**). Liquid bulk cargo, which accounted for 32% of total cargo at Turkish ports in 2023, declined to 30% in 2024. The share of solid bulk cargo remained unchanged, while container and general cargo volumes increased by 1% each.

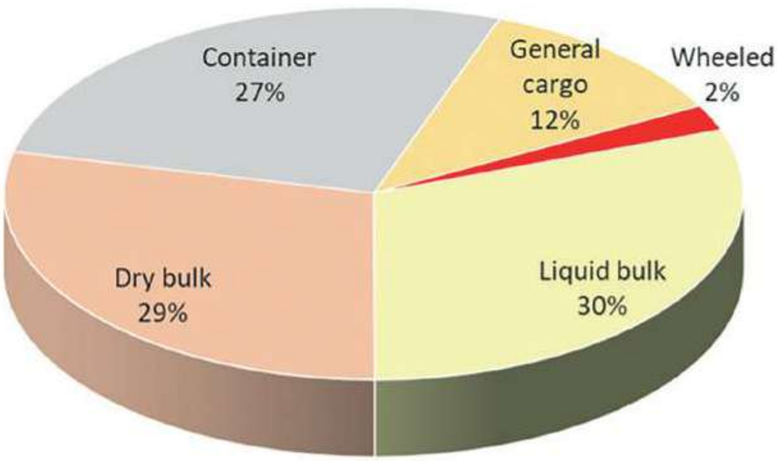


Figure 3.9 Cargo distribution in our ports.

In 2024, total cargo handled at Turkish ports increased by 2% (10.6 million tonnes) compared to the previous year, reaching 531.7 million tonne. Across all cargo types and customs regimes, 57.8% (307.3 million tonnes) of the cargo was discharged and 42.2% (224.3 million tonnes) was loaded. Among discharged cargo, dry bulk ranked first with 103.9 million tonnes. Container cargo accounted for the highest volume of loading, with 78.9 million tonnes (Table 3.2). (**Tablo 3.2**).

Table 3.2 Loading/unloading according to load types. * (tonnes)

Load Type	2023	2024		
	Total	Loading	Unloading	Total
Liquid Bulk Cargo	167.788.070	70.347.209	91.867.779	162.214.988
Solid Bulk Cargo	153.714.732	48.211.776	103.984.872	152.196.648
Container	133.467.400	78.966.650	64.391.016	143.357.666
General Cargo	54.864.485	20.148.286	41.951.829	62.100.115
Vehicle	11.245.117	6.681.943	5.185.998	11.867.941
Total	**521.079.804**	**224.355.864**	**307.381.494**	**531.737.358**

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In tonnage terms, general cargo rose by 11.7%, container cargo by 6.9%, and vehicle (Ro-Ro) cargo by 5.2% year-on-year Liquid and solid bulk cargo volumes declined by 3.4% and 1%, respectively. Year-on-year, container cargo increased by 9.8 million tonnes, general cargo by 7.2 million tonnes, and vehicle (Ro-Ro) cargo by 622 thousand tonnes. In contrast, liquid bulk and solid bulk cargo declined by 5.5 million tonnes and 1%, respectively (**Figure 3.10**).

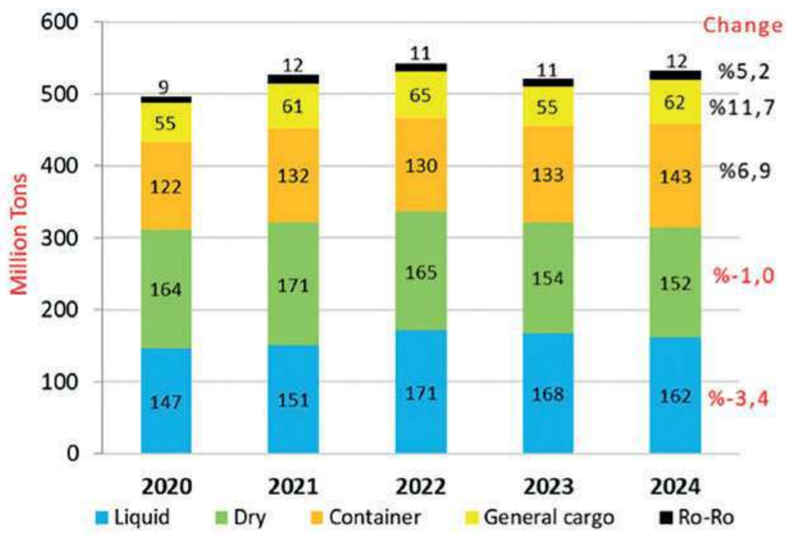

Figure 3.10 Load development in 2020-2024 (million tonnes).

In terms of tonnage, the highest volume of export cargo was container cargo, totaling 54.7 million tonnes, while dry bulk cargo led imports with 97.9 million tonnes. Among cabotage cargo, liquid bulk was the most handled type at 28.9 million tonnes, while container cargo dominated transit traffic with 36.1 million tonnes (**Table 3.3**).

Table 3.3 Cargo distribution according to the types of cargo handled in our ports. (tonnes, 2024)

Load Type	Export	Imports	Cabotage	Transit	Total
Liquid Bulk Cargo	24.467.266	76.778.722	28.977.814	31.991.186	162.214.988
Dry Bulk Cargo	41.817.703	97.929.354	11.719.086	730.505	152.196.648
Container	54.768.606	40.730.004	11.704.694	36.154.362	143.357.666
General Cargo	14.562.088	36.525.555	10.824.275	188.197	62.100.115
Vehicle	6.662.474	5.172.785	32.571	111	11.867.941
Total	**142.278.137**	**257.136.420**	**63.258.440**	**69.064.361**	**531.737.358**

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Cargo groups with the highest volumes were analysed by categorising them based on their fundamental characteristics. Petroleum products, which had long ranked first among cargo groups, dropped to second place in 2024. Machines, machine parts, and containers became the leading cargo group, accounting for 30.7% of total cargo handled. Petroleum products account for 29% of the cargo handled at ports, 8.2% consists of solid mineral fuels and metal products, 7.7% of ores and metal residues, and 6.4% of metal products. All other product categories each accounted for less than 5% (**Table 3.4**).

Table 3.4 Cargo groups handled at the highest rate in our ports (tonnes, 2024). *

#	Load type	Loading	Unloading	Total	Ratio %	Change %**
1	Machines, machine parts and containers	89.510.395	73.620.254	163.130.649	30,7%	8,1
2	Petroleum products	64.962.918	89.386.596	154.349.514	29,0%	-3,1
3	Solid mineral fuels	768.035	42.577.882	43.345.917	8,2%	0,0
4	Ore and metal residues	9.399.490	31.619.951	41.019.441	7,7%	9,1
5	Raw and manufactured minerals, construction materials	34.382.948	6.386.668	40.769.616	7,7%	1,8
6	Metal products	12.444.098	21.495.991	33.940.089	6,4%	10,3
7	Foodstuffs and animal feed	2.473.749	13.916.551	16.390.300	3,1%	10,5
8	Chemicals	6.271.817	10.070.602	16.342.419	3,1%	5,2
9	Agricultural products and live animals	1.950.898	12.032.964	13.983.862	2,6%	-31,0
10	Fertilisers	1.740.093	5.990.537	7.730.630	1,5%	-3,7
11	Other	451.423	283.498	734.921	0,1%	56,3
	Total	**249.339.322**	**282.148.211**	**531.737.358**	**100,0%**	

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*** Change in freight volume in 2023 & 2024*

In 2023, "Machinery, machinery parts, and containers" ranked second with 150.2 million tonnes. By 2024, they had increased by 12.2 million tonnes, becoming the leading cargo group at 163.1 million tonnes. "Petroleum products" followed in second place, declining by 4.9 million tonnes to 154 million. "Solid mineral fuels" maintained third place in both 2023 and 2024, reaching 43.3 million tonnes.

To assess annual cargo trends at Turkish ports, it is important to identify which cargo types increased or decreased, and whether these changes were due to loading or unloading. Accordingly, cargo types loaded and discharged over the past year have been analysed.

The largest increase in loaded cargo was recorded in "Machinery, machine parts, and containers", rising by 8.1 million tonnes. "Metal products" followed with a 2 million tonne increase, and "Ore and metal wastes" rose by 1.4 million tonnes. The largest decline in loaded cargo was in "Petroleum products' (down 4.4 million tonnes), followed by 'Fertiliser" (down 1.3 million tonnes).

Among discharged cargo, "Machinery, machine parts, and containers" showed the largest increase, rising by 4.1 million tonnes compared to the previous year. Other notable increases in discharged cargo included "Ore and metal wastes" (1.9 million tonnes), "Foodstuffs and animal feeds" (1.2 million tonnes), and "Metal products" (1.1 million tonnes). The largest decline in discharged cargo was in "Agricultural products and live animals", which fell by 4.9 million tonnes (**Table 3.5**).

Table 3.5 Changes in cargo handled in our ports compared to the previous year. *

Load type	Loading		Unloading		Total	
	%	Tone	%	Tone	%	Tone
Machines, machine parts and containers	10,0	8.125.287	6,0	4.143.560	8,1	12.268.847
Petroleum products	-6,5	-4.483.689	-0,5	-455.414	-3,1	-4.939.103
Solid mineral fuels	-38,9	-489.937	1,2	490.425	0,0	488
Ore and metal residues	18,4	1.457.524	6,6	1.948.305	9,1	3.405.829
Raw and manufactured minerals, construction materials	0,9	312.386	6,6	394.346	1,8	706.732
Metal products	19,6	2.035.489	5,6	1.138.522	10,3	3.174.011
Foodstuffs and animal feed	12,8	280.774	10,1	1.275.405	10,5	1.556.179
Chemicals	0,3	21.826	8,4	783.338	5,2	805.164
Agricultural products and live animals	-40,5	-1.325.890	-29,2	-4.960.324	-31,0	-6.286.214
Fertilisers	21,9	312.684	-9,3	-611.680	-3,7	-298.996
Other	52,3	155.075	63,0	109.542	56,3	264.617

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The port authorities handling a total of 10 million tonnes or more are given in **Table 3.6**. In 2024, In 2024, Aliağa Port Authority handled the highest volume of cargo at 85.4 million tonnes, followed by Kocaeli (83.7 million tonnes), İskenderun (68.5 million tonnes), and Tekirdağ (48.1 million tonnes).

In percentage terms, the highest increase was recorded at ports under Gemlik Port Authority (15.5%), while the largest decrease occurred under Ceyhan Port Authority (12.2%). The reduction in petroleum products was the key factor behind the decline at Ceyhan Port Authority.

Table 3.6 Cargo ranking of port authorities. *

	Port Authority	2023	2024	2023
1	Aliaga	81.355.615	85.454.864	5,0
2	Kocaeli	81.291.544	83.787.739	3,1
3	Iskenderun	63.746.070	68.563.930	7,6
4	Tekirdag	45.075.103	48.184.044	6,9
5	Ceyhan	52.068.253	45.723.036	-12,2
6	Mersin	42.715.257	40.526.707	-5,1
7	Ambarli	32.597.749	31.147.705	-4,4
8	Gemlik	14.558.917	16.814.940	15,5
9	Karabiga	12.514.917	12.975.655	3,7
10	Samsun	14.176.568	12.747.789	-10,1
11	Zonguldak	11.119.090	11.966.306	7,6

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Regionally, 41.2% (218.9 million tonnes) of the cargo handled at Turkish ports was processed in the Marmara Region. The Mediterranean Region ranked second with 31.2% (166.1 million tonnes), followed by the Aegean Region with 19.2% (102.2 million tonnes), and the Black Sea Region with 8.4% (44.4 million tonnes) (**Figure 3.11**)

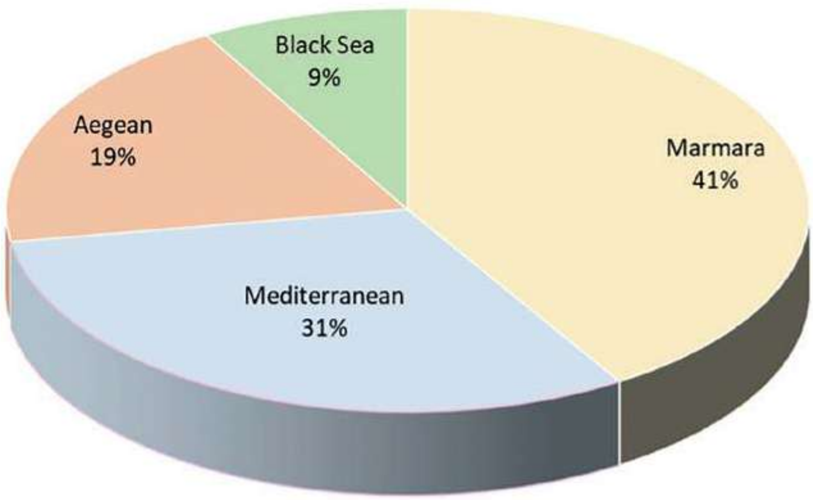

Figure 3.11 Cargo handling rates by regions.

In 2024, the total cargo handled at ports in the Aegean Region exceeded 100 million tonnes, with its share of total cargo rising from 17.3% to 19.2% over the past five years. While the Marmara Region's share of total cargo has increased over the past three years, the Mediterranean Region's share has declined over the past five years (**Figure 3.12**).

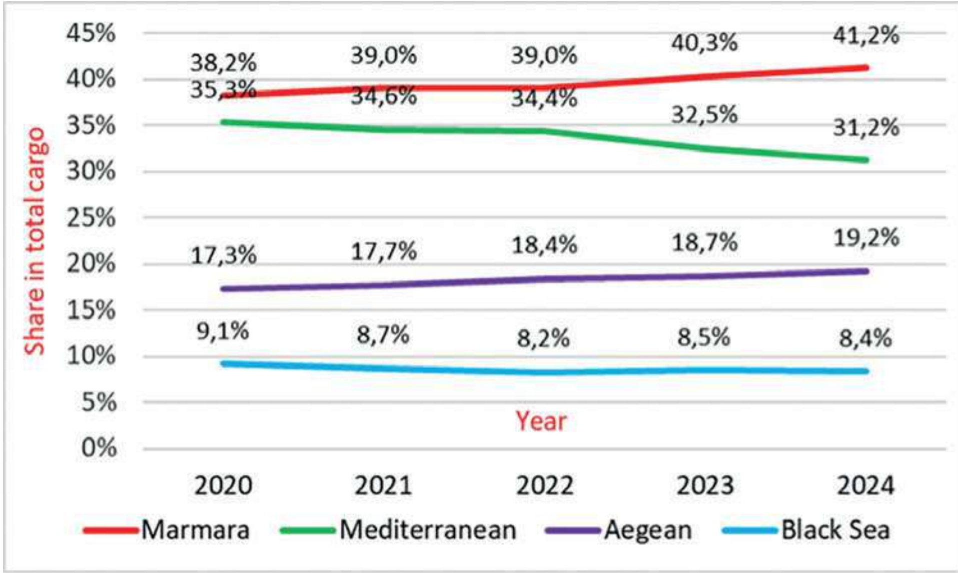

Figure 3.12 Proportional distribution of cargo handled by regions.

The Marmara Region recorded the highest increase in cargo volume, with a rise of 8.7 million tonnes (4.2%). This was followed by the Aegean Region, which saw an increase of 4.9 million tonnes (5.1%). The Mediterranean Region ended the year with a decline of 3.3 million tonnes (2.0%) (**Table 3.7**).

Table 3.7 Cargo handling by regions (tonnes). *

Regions	2021	2022	2023	2024	Change % 2023 - 2024
Marmara	211.707.897	211.707.897	210.196.062	218.945.921	4,2
Mediterranean	186.452.430	186.452.430	169.462.853	166.125.751	-2,0
Aegean	99.793.264	99.793.264	97.326.421	102.249.567	5,1
Black Sea	44.656.692	44.656.692	44.094.468	44.416.119	0,7
General Total	542.610.283	542.610.283	521.079.804	531.737.358	2,0

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Ports located in close proximity often exhibit similar cargo characteristics due to their shared hinterland. Given these similarities, geographical regions can be analysed as sub-port zones, classified by their sea and land transport connections and cargo profiles.

The Marmara Region was divided into three sub-regions: Northwest Marmara, Northeast Marmara, and South Marmara. The Aegean Region was divided into North and South Aegean; the Mediterranean Region into West and East Mediterranean; and the Black Sea Region into West and East Black Sea (**Figure 3.13**).

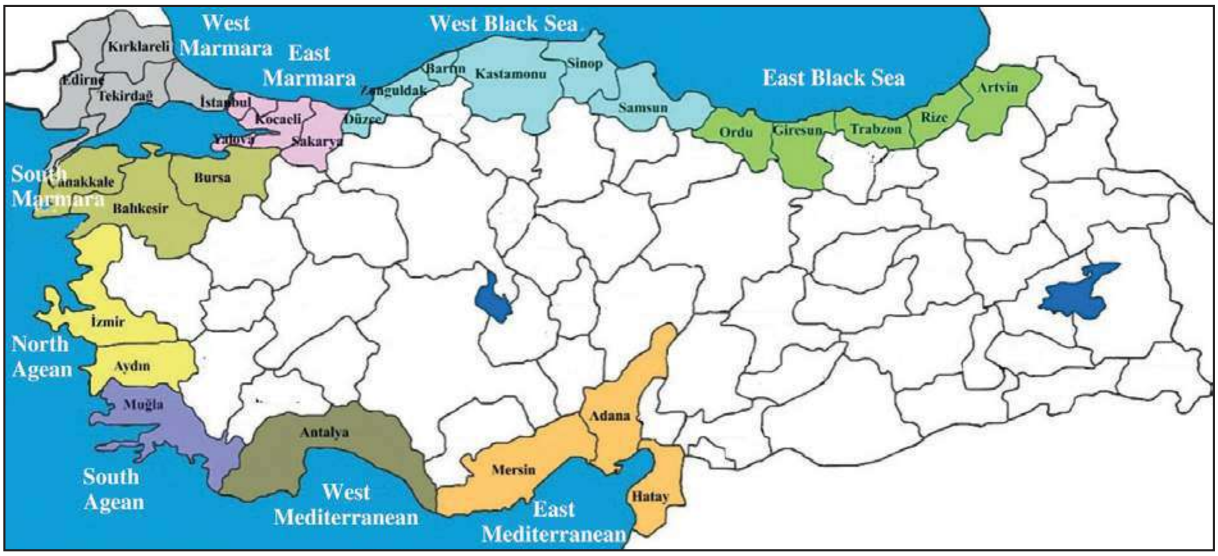

Figure 3.13 Port sub-areas

Among the 194 currently active ports based on operating permits, the Eastern Mediterranean Region has the highest number of terminals, totaling 94. It is followed by the Eastern Marmara Region with 87 terminals, and the Northwest Marmara Region with 75 terminals (**Tables 3.8 and 3.9**). No port facility in the South Aegean Region currently provides container services. The number of terminals is based on operating licences (including temporary operating licences). Some port facilities are listed in the operating permit as offering this service, though they do not actually provide it. For example, ports like TTK Zonguldak, Güllük, and Bandırma Bağfaş list container services in their operating permits, but do not actually provide them.

Table 3.8 Number of terminals by sub-regions (excluding liquid).

Regions / Terminals	Ferry Passenger	General Cargo	Bulk Cargo	Ro-Ro	Container
Eastern Black Sea	6	14	13	7	7
Western Black Sea	3	6	6	4	4
Northeast Marmara	0	20	20	6	7
South Marmara	9	18	18	11	7
Northwest Marmara	8	9	10	10	8
North Aegean	5	10	10	4	4
South Aegean	4	2	1	3	1
Western Mediterranean	2	2	2	1	2
Eastern Mediterranean	3	18	20	9	6
Total Terminal	**40**	**99**	**100**	**55**	**46**

Table 3.9 Number of liquid bulk terminals by sub-regions.

Regions / Terminals	Oil/Product	Chemical	LPG/LNG
Eastern Black Sea	9	5	5
Western Black Sea	5	3	3
Northeast Marmara	14	15	5
South Marmara	2	7	3
Northwest Marmara	6	4	4
North Aegean	6	5	8
South Aegean	1	0	0
Western Mediterranean	5	1	1
Eastern Mediterranean	22	9	7
Total Terminal	**70**	**49**	**36**

By sub-region, the Eastern Mediterranean-home to Mersin and İskenderun Bay ports-recorded the highest cargo volume (**Table 3.10**). The North Aegean Region, home to Aliağa Bay ports, ranks second, followed by the Eastern Marmara Region with ports in İzmit Bay. The differences in cargo volumes among regions are primarily due to petroleum and its derivatives, as well as iron and steel products.

Table 3.10 The amount of cargo handled in our ports by sub-regions.

Subregions	Cargo Handled (Tonnes)		Change
	2023	2024	2023 & 2024
Eastern Mediterranean (EM)	162.828.179	160.512.042	-1,4%
North Aegean (NA)	91.937.669	96.072.318	4,5%
Northwest Marmara (NWM)	87.020.709	89.265.076	2,6%
East Marmara (EM)	81.291.544	83.787.739	3,1%
South Marmara (SM)	41.883.809	45.893.106	9,6%
Western Black Sea (WB)	38.209.147	38.425.471	0,6%
South Aegean (SA)	5.388.752	6.177.249	14,6%
Western Mediterranean (WM)	6.634.674	5.613.709	-15,4%
Eastern Black Sea (EB)	5.885.321	5.990.648	1,8%
Total	**521.079.804**	**531.737.358**	**%2,0**

In proportional terms, 30% of the total cargo in Türkiye was handled by ports in the Eastern Mediterranean Region. The North Aegean Region (18%) and Northwest Marmara Region (17%) ranked second and third, respectively (**Figure 3.14**).

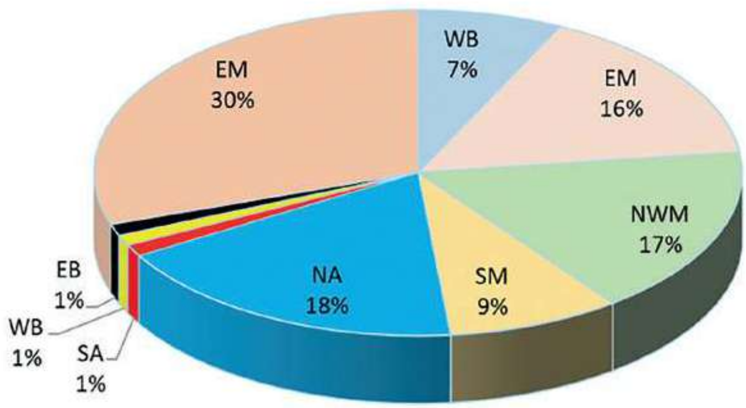

Figure 3.14 Proportional distribution of cargo handled in our ports by sub-regions.

In foreign trade cargo volumes at Turkish ports, the Russian Federation ranks first as both the primary origin and destination country, as well as in total volume. The cargo volume of 78.6 million tonnes in 2023 increased by 28.4% to 100.9 million tonnes in 2024. Italy, which ranked second in total cargo volume, closed the year with 44.6 million tonnes of cargo, a decrease of 25.5% (15 million tonnes) compared to 2023. Among the top 20 countries in foreign trade cargo, China recorded the highest year-on-year increase, rising by 46%. In 2023, Israel, Saudi Arabia, Iraq, and India were among the top 20 but dropped off the list in 2024, replaced by Colombia, Singapore, South Korea, and Malta.

Russia, Italy, and the United States together accounted for 38.2% of the total cargo handled. The top 10 countries accounted for approximately 61.6% of total cargo handled (**Table 3.11**).

Table 3.11 Distribution of cargo handled in our ports by countries. * (tonnes)

Ranking	Countries	Total 2023	Export 2024	Imports 2024	Transit 2024	Total 2024
1	Russian Fed.	78.613.801	4.270.742	91.937.087	4.708.548	100.916.377
2	Italy	59.903.914	17.236.977	8.538.495	18.947.838	44.723.310
3	U.S.A.	32.786.986	13.098.353	19.646.552	837.282	33.582.187
4	Egypt	22.525.706	9.087.597	11.901.287	2.648.862	23.637.746
5	China	14.181.171	6.567.844	10.190.265	4.010.208	20.768.317
6	Greece	16.662.516	7.268.455	8.569.399	4.303.547	20.141.401
7	Spain	18.200.983	10.349.990	3.713.150	1.500.031	15.563.171
8	Romania	10.781.660	4.951.591	2.696.294	3.484.570	11.132.455
9	Belgium	12.037.031	4.968.802	4.695.082	1.132.129	10.796.013
10	Ukraine	9.619.757	1.900.911	7.091.122	392.378	9.384.411
11	Algeria	7.665.873	2.138.257	6.527.760	535.599	9.201.616
12	Netherlands	7.556.521	3.821.437	4.475.591	842.639	9.139.667
13	Brazil	8.153.609	897.845	7.632.838	66.667	8.597.350
14	United Kingdom	7.290.531	3.996.617	3.286.024	1.218.419	8.501.060
15	Colombia	11.782.023	141.994	7.388.216	20.169	7.550.379
16	Singapore	4.276.332	3.563.976	1.848.532	2.108.256	7.520.764
17	South Korea	5.013.632	1.162.669	4.661.916	1.296.610	7.121.195
18	France	6.928.641	3.079.290	3.265.197	588.416	6.932.903
19	Morocco	6.114.086	4.341.127	1.613.147	772.020	6.726.294
20	Malta	5.675.304	2.676.619	3.744.841	262.323	6.683.783

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The foreign trade volumes of ten countries were analysed based on the country of origin and destination for cargo handled at Turkish ports. The highest year-on-year increase was recorded for the People's Republic of China, at 46.4%. The Russian Federation followed with an increase of 28.4%. Although second in proportional growth, maritime trade with the Russian Federation through Turkish ports increased by 22.3 million tonnes over the past year. Italy recorded the largest decline both in proportional and absolute cargo volume. Cargo from Italy declined by over 45 million tonnes, representing a 25.3% decrease (**Table 3.12**).

Over the five-year period (2020–2024), the highest increase was recorded for the People's Republic of China. The total cargo volume of 9.3 million tonnes in 2020 increased to 20.7 million tonnes in 2024. The Russian Federation ranked second, with foreign trade cargo increasing by 77.2%. The volume of 56.9 million tonnes of cargo in 2020 reached 100.9 million tonnes in 2024 (**Table 3.12**).

Table 3.12 Five-year development of cargo handled in our ports on country basis.

#	Countries	Years (Million tonnes)					Change	
		2020	2021	2022	2023	2024	23&24	20&24
1	Russian Fed.	57	59	103	79	101	28,4%	77,2%
2	Italy	54	62	45	60	45	-25,3%	-17,7%
3	U.S.A.	25	27	28	33	34	2,4%	35,1%
4	Egypt	21	20	23	23	24	4,9%	13,6%
5	China	9	12	14	14	21	46,4%	122,0%
6	Greece	19	18	17	17	20	20,9%	7,9%
7	Spain	19	19	18	18	16	-14,5%	-19,1%
8	Romania	8	9	11	11	11	3,3%	34,7%
9	Belgium	12	13	12	12	11	-10,3%	-8,3%
10	Ukraine	17	20	10	10	9	-2,4%	-44,5%

3.2. Dry Bulk and General Cargo Ports

General cargo and/or dry bulk cargo services are provided in 105 ports in Türkiye (**Figure 3.15**). Excluding buoy and dolphin-type coastal structures for liquid bulk cargo, general and dry bulk ports represent the largest group by number in Türkiye.

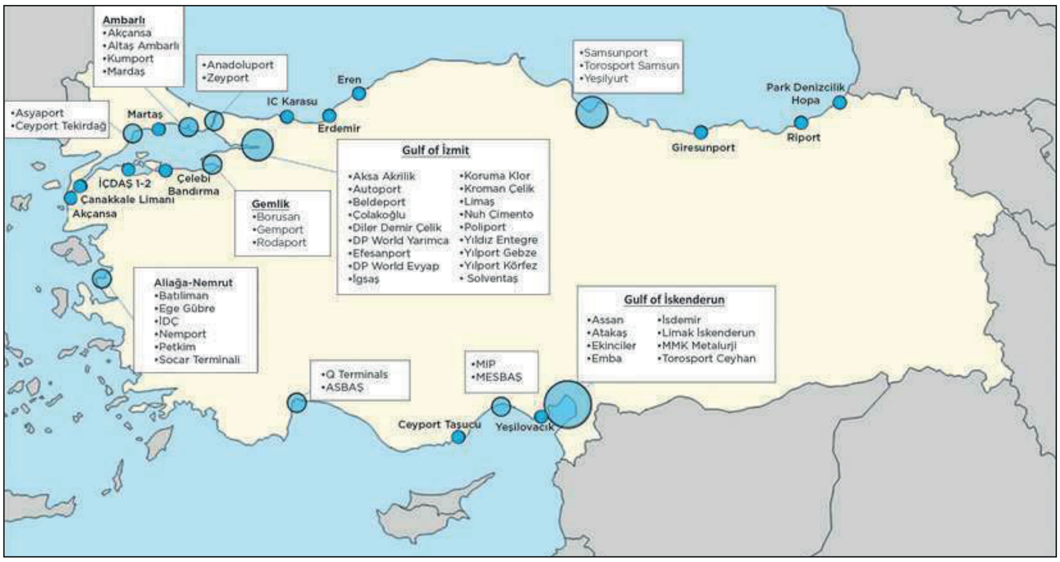
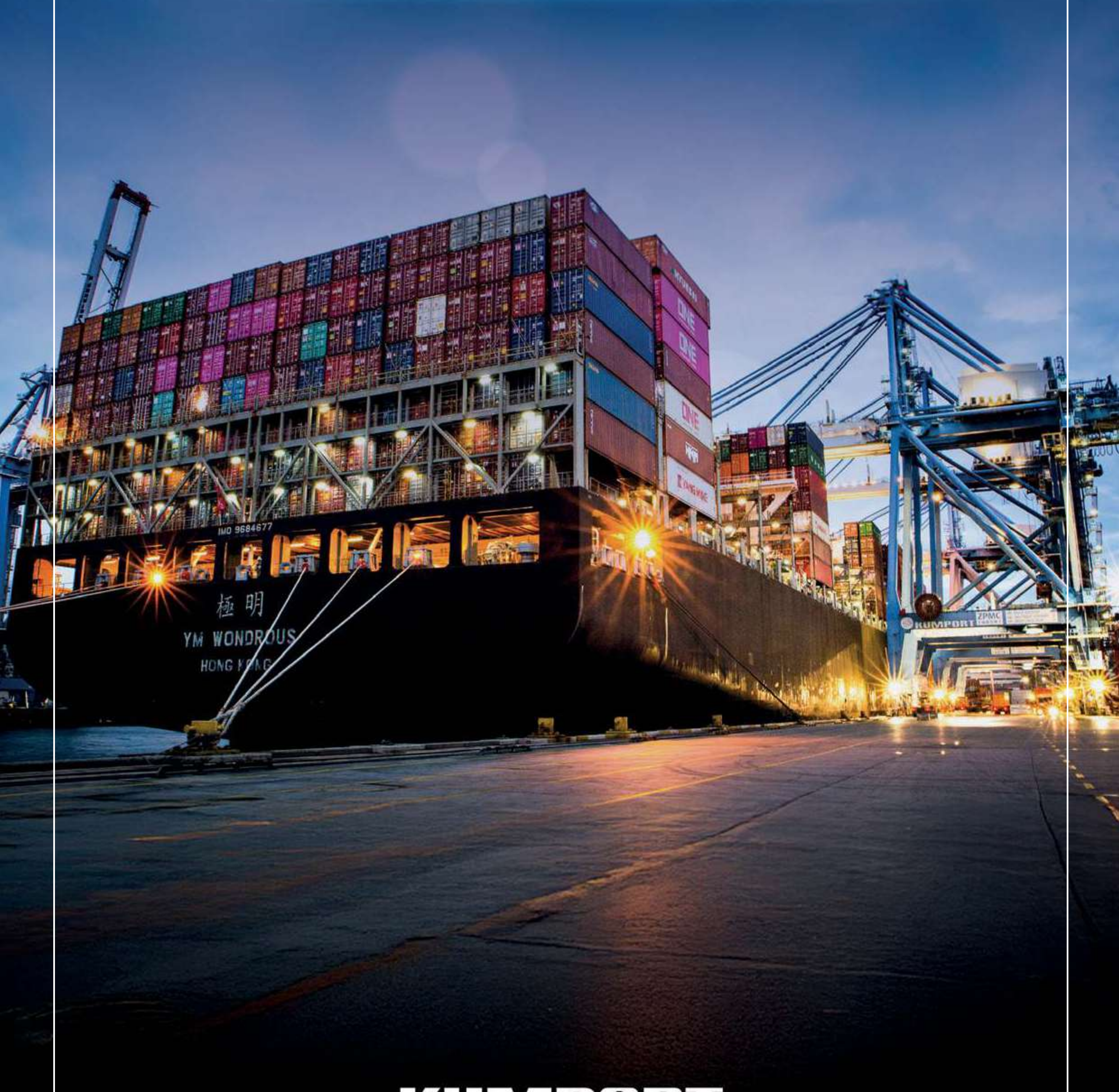


Figure 3.15 Authorised for dry bulk and general cargo handling.

As one of the leading ports in the Marmara Region,

we provide high-standard vessel operations and terminal services.



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In 2024, dry bulk cargoes increased by 2.7% (5.7 million tonnes) compared to the previous year and reached 214.2 million tonnes. General cargo rose by 13.2% (7.2 million tonnes) year-on-year, reaching 62.1 million tonnes in 2024. Combined general and dry bulk cargo rose from 208.5 million tonnes in 2023 to 214.3 million tonnes in 2024, a 2.7% increase (**Figure 3.16**)

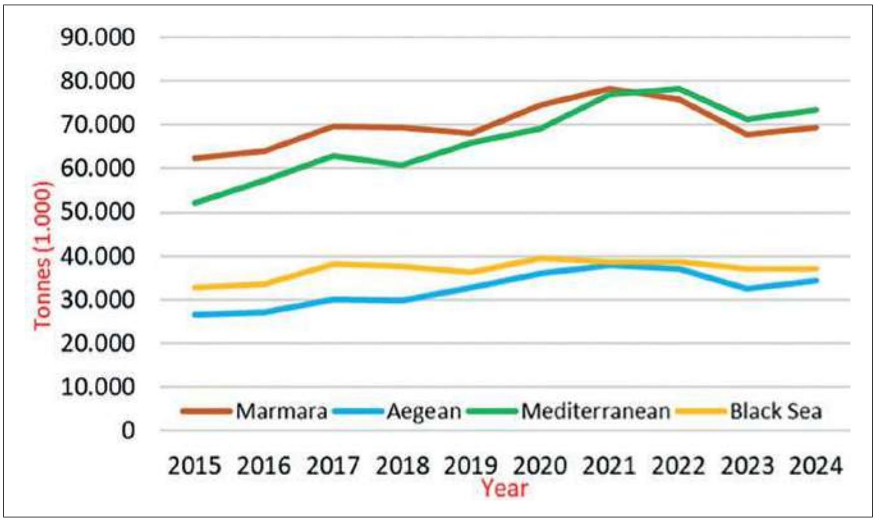


Figure 3.16 Changes in general cargo (+dry bulk) by regions.

General and dry bulk cargo accounted for 40.3% of total cargo, with 214.3 million tonnes. This represents an annual increase of 5.7 million tonnes in 2024. The largest contributor to this increase was general cargo.

Ports in the Mediterranean Region handled the largest share of general and dry bulk cargo-34% or 73.3 million tonnes. They were followed by Marmara Region (69.4 million tonnes, 33%), Black Sea Region (37.1 million tonnes, 17%), and Aegean Region (34.3 million tonnes, 16%) (**Figure 3.17**).

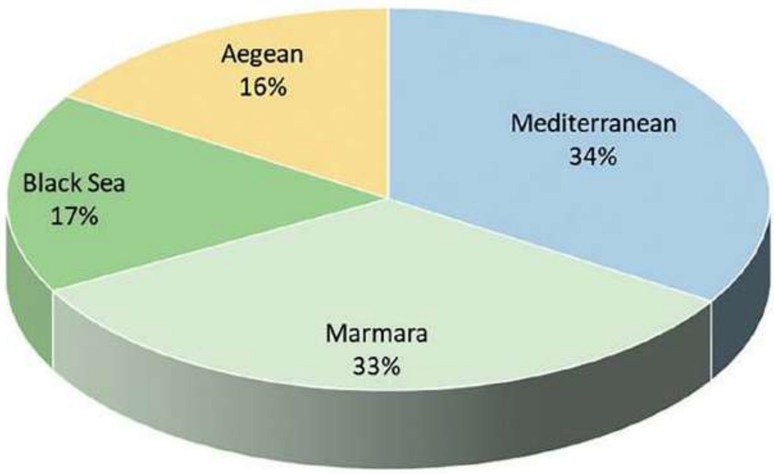


Figure 3.17 Proportional distribution of general cargo (+dry bulk) by regions.

As of 2024, approximately 69.5% of the 214 million tonnes of general and dry bulk cargo was handled by TÜRKLİM member ports. İSDEMİR, EREN, and ERDEMİR ports handled the highest volumes of general and dry bulk cargo. Public ports, consisting of TCDD Haydarpaşa and TCDD İzmir, handled 4.6 million tonnes, representing 2.2% of the total (**Table 3.13**).

Table 3.13 Ports handling dry bulk and general cargo.

#	Port Name	2022	2023	2024
1	ISDEMIR	12.679.955	10.452.445	12.559.133
2	EREN	10.075.942	9.811.517	10.139.697
3	ERDEMIR	9.624.318	9.153.843	9.831.571
4	ATAKAS	8.182.862	7.956.521	8.824.133
5	ICDAS 1	6.332.000	6.112.762	6.145.584
6	MIP	8.732.800	7.435.988	6.132.216
7	COLAKOGLU	3.848.601	4.079.962	5.222.871
8	YESILOVACIK	4.061.556	3.560.214	5.035.899
9	YESILYURT	5.575.650	5.583.710	5.015.464
10	BATILIMAN	5.111.533	4.280.860	4.762.180
11	IDC	5.609.073	4.418.269	4.454.705
12	CELEBI BANDIRMA	4.386.561	4.010.543	4.349.345
13	AKCANSA CANAKKALE	4.255.818	3.864.918	3.915.595
14	NUHPORT	5.529.368	4.072.309	3.850.456
15	MMK	6.558.959	5.564.065	3.781.091
16	EMBA	1.485.041	3.824.398	3.438.427
17	ICDAS 2	2.638.623	3.066.751	3.426.068
18	EKINCILER ISKENDERUN	4.172.882	3.513.994	3.379.008
19	BORUSAN	3.456.744	3.218.281	3.301.307
20	MARTAS	3.006.740	2.410.950	2.984.551
(Tonnes)	TURKLIM Total	160.536.651	148.758.418	148.844.912
(Tonnes)	Türkiye Total	229.863.125	208.579.217	214.296.763
(%)	**TURKLIM Share**	**%69,8**	**%71,3**	**69,5**
	Other Private Ports	69.471.419	55.659.609	60.776.417
(%)	**Private Ports Share**	**%28,3**	**%26,7**	**%28,4**
	Public Ports*	4.237.383	4.161.190	4.675.434
(%)	**Public Ports***	**%1,8**	**%4,0**	**%2,2**
* Izmir and Haydarpasa Ports				

3.3. Container Ports

In Türkiye, 46 ports—including those with temporary operation permits—are authorised to handle container ships and cargo. However, only 28 of these are currently operational for container services. Of the active container ports, 18 are located in the Marmara Region. Both the Mediterranean and Aegean Regions each have four ports providing container services (**Figure 3.18**).

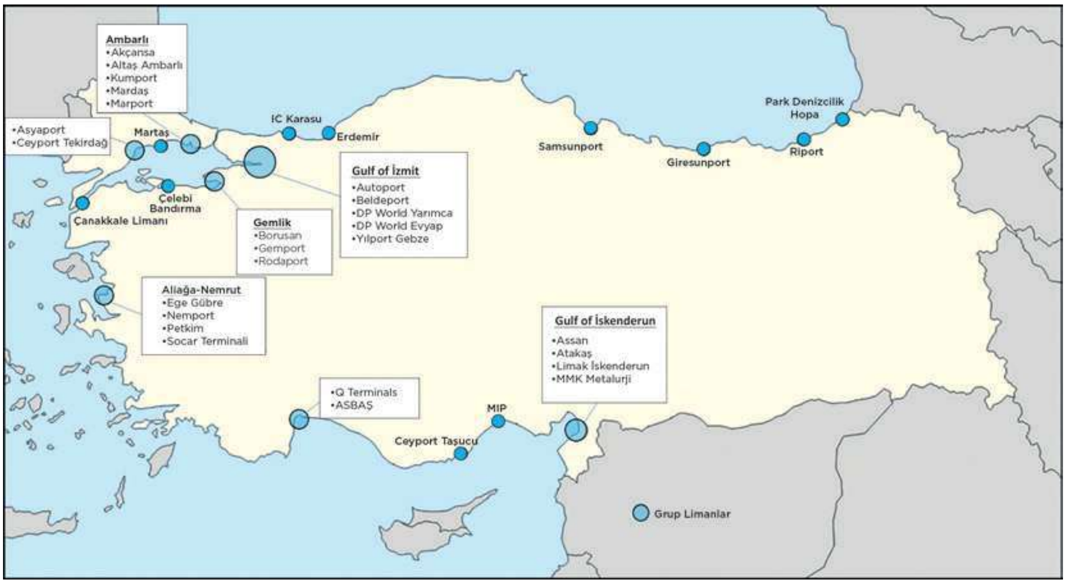


Figure 3.18 TURKLIM member ports with container handling permits.

Marmara Region ranked first, handling 61.1% of Türkiye's total container volume. The Marmara Region has consistently led by a significant margin for many years. It is followed by the Mediterranean Region (20.3%) and the Aegean Region (17.6%). The share of Black Sea Region ports in total container handling volume is only 1.0% (**Figure 3.19**).

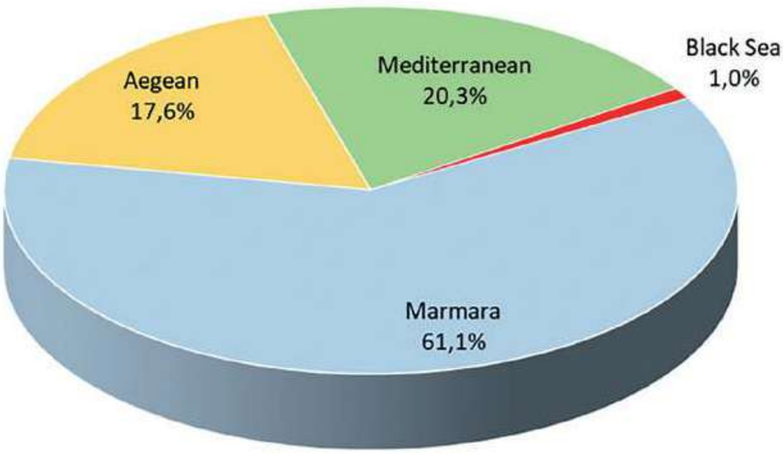


Figure 3.19 Container handling rates by regions.

Over the past decade, the Marmara Region's share in total container handling has fluctuated by less than 1%. During the same period, the share of the Black Sea Region in total container handling remained below 1%. Over the past five years, the Mediterranean Region's share has shown a steady decline. In contrast, the Aegean Region has experienced a rising trend (**Figure 3.20**).

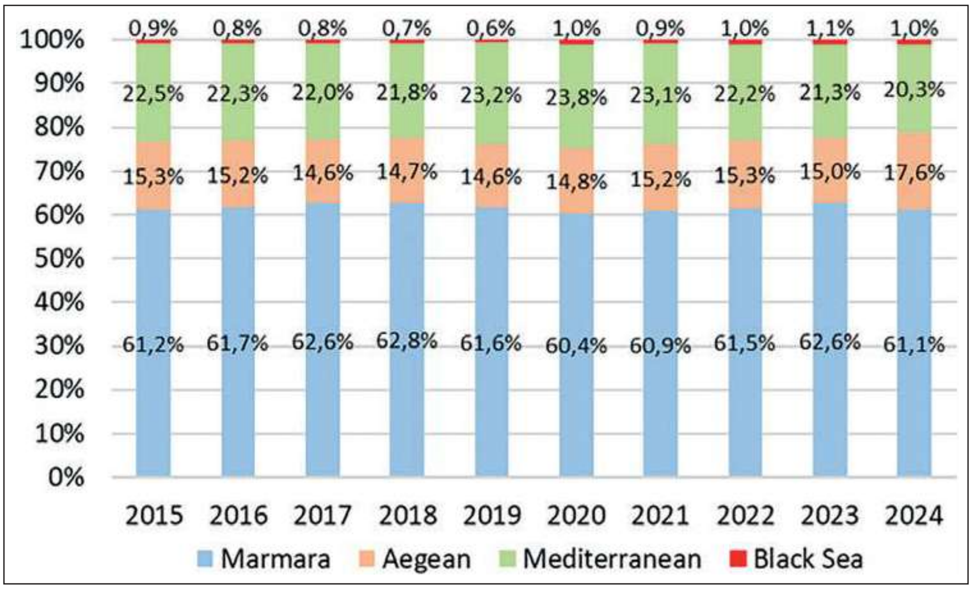


Figure 3.20 Share of regions in total container handling.

As of 2024, a total of 13,750,585 TEUs were handled at Turkish ports. Of these, 9,398,633 TEUs were related to foreign trade and cabotage, while 4,351,952 TEUs were transit containers (**Figure 3.21, Table 3.14, Table 3.15**). While foreign trade and cabotage container volumes slightly declined, transit container volume surged by a record 30.4%. Overall, total container throughput at Turkish ports increased by 7.7%.

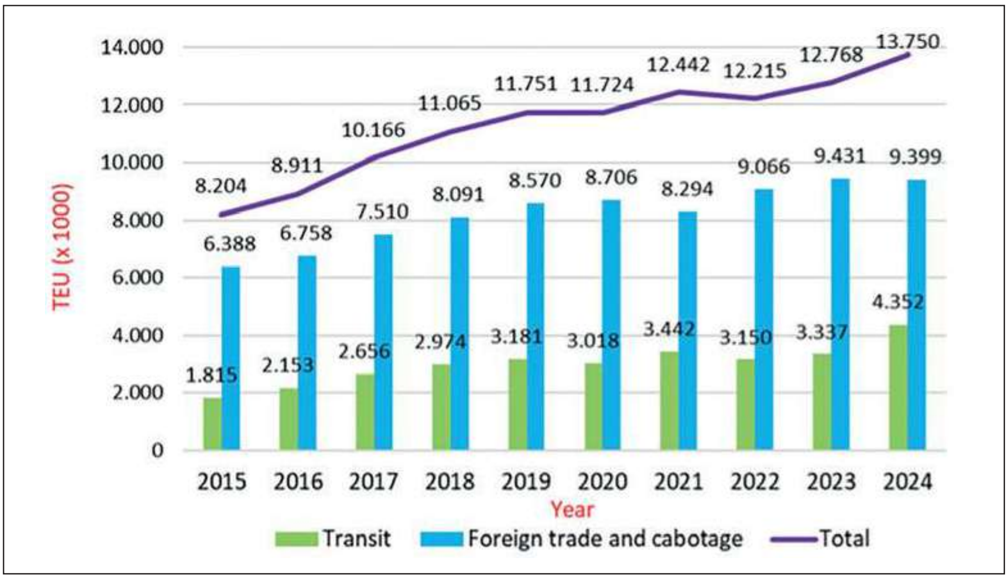


Figure 3.21 Development of container handling in Turkish ports. (TEU)

ASYAPORT ranked first in 2024, handling 2,098,255 TEUs—16.4% of the national total. MIP Mersin International Port, which ranked first for the last six years, ranked second by handling 1,932,319 TEU containers. MIP Mersin International Port was followed by Marport Port with 1.3 million TEU. KUMPORT Port, which ranked fourth, handled a total of 1.2 million TEU. Nemport became the fifth port in Türkiye to exceed one million TEUs, and the first in the Aegean Region (**Table 3.14**). Public ports TCDD İzmir and TCDD Haydarpaşa accounted for 2.0% of total container handling.

Table 3.14 Cargo development in container handling ports in Türkiye. (TEU)

Ranking	Ports	2021	2022	2023	2024
1	ASYAPORT	1.802.517	1.796.876	1.719.426	2.098.255
2	MIP MERSİN	2.097.349	2.020.967	1.949.882	1.932.319
3	MARPORT	1.503.254	1.340.099	1.472.811	1.348.906
4	KUMPORT	1.211.515	1.175.741	1.275.200	1.217.885
5	NEMPORT	544.568	558.648	589.267	1.139.123
6	DP WORLD YARIMCA	666.174	623.217	613.040	810.097
7	YILPORT	566.447	546.866	639.852	679.664
8	GEMPORT	682.064	676.782	583.713	635.225
9	LIMAK İSKENDERUN	476.627	496.583	405.479	541.278
10	SOCAR TERMINAL	357.314	414.702	432.000	531.737
11	EGE GUBRE	488.507	512.015	564.661	489.142
12	MARDAS	222.640	354.910	441.873	448.782
13	DP WORLD EVYAP	599.566	680.650	600.377	428.800
14	ASSAN	214.484	177.661	255.334	257.516
15	RODA PORT	92.408	94.330	136.095	168.922
16	BELDEPORT		49.300	128.442	163.327
17	SAMSUNPORT	102.155	106.042	124.913	91.190
18	BORUSAN	138.491	122.796	96.808	90.506
19	Q TERMİNALS ANTALYA	116.786	93.016	84.523	74.274
20	GIRESUN	N/A	N/A	N/A	21.121
21	AKCANSA	16.776	15.847	10.939	13.036
22	CELEBI BANDIRMA	6.981	10.616	2.341	5.190
23	ULUSOY	3.451	2.639	2.234	2.027
(TEU)	TURKLIM Total	11.910.074	11.870.954	12.129.032	13.188.606
(TEU)	**Türkiye Total**	**12.442.449**	**12.215.269**	**12.767.934**	**13.750.585**
(%)	**TURKLIM Share**	**%95,7**	**%97,2**	**%95,0**	**%95,9**
(%)	Other Private Ports	%0,7	%1,5	%1,7	%2,1
(%)	Private Ports Share	%95,5	%96,7	%97,6	%98,0
(%)	Public Ports**	%4,5	%3,5	%2,4	%2,0

** Izmir and Haydarpasa Ports,*
Derince and Trabzon Ports, which are not TURKLIM members, are not included in the list.

In 2024, TÜRKLİM member ports handled 13,188,606 TEUs, accounting for 95.9% of Türkiye's total container volume (13,750,585 TEUs).

The Marmara Region has long served as a key transshipment hub, particularly for Black Sea cargoes. In Türkiye, 73.1% of all transit or transshipment containers are handled by ports in the Marmara Region. The Aegean Region, home to NEMPORT, ranks second with a 15% share. The Mediterranean Region—which includes MIP Mersin International, Iskenderun LİMAK, and Iskenderun ASSAN ports—ranks third with a 12% share of transit cargo. In 2024, ASYAPORT, NEMPORT, MARPORT, KUMPORT, and MIP Mersin International Port recorded the highest volumes of transit container handling. As in the previous three years, ASYAPORT remained the only port to surpass one million TEUs in transit containers. NEMPORT recorded the highest increase in transit container volume. It also became the first port in the Aegean Region to handle over 500,000 TEUs of transit containers (**Table 3.15**).

Table 3.15 Transit container handling (TEU)

Ports	2020	2021	2022	2023	2024
ASYAPORT	1.134.848	1.443.235	1.375.789	1.341.926	1.665.165
NEMPORT	4.855	11.009	10.588	43.477	584.849
KUMPORT	542.059	556.436	444.818	533.647	569.079
MARPORT	657.560	702.220	549.691	567.512	508.923
MIP	429.070	456.225	437.064	437.220	462.485
DP WORLD YARIMCA	173.353	141.184	57.507	4.203	110.856
RODA	2.412	3.133	22.781	63.081	86.886
MARDAS	14.696	37.197	88.730	93.824	86.563
BELDEPORT	N/A	N/A	182	53.592	64.705
DP WORLD EVYAP	14.059	54.286	54.168	28.042	52.198
SOCAR TERMINAL	1.808	13.068	15.660	24.779	51.280
LIMAK ISKENDERUN	21.195	24.698	30.359	27.465	43.935
YILPORT	2.222	3.584	4.315	34.284	28.643
GEMPORT	4.371	10.179	24.424	22.073	13.462
EGE GUBRE	9.270	9.261	22.872	26.734	12.834
ASSAN	5.789	8.622	10.711	1.301	10.089
Transit container	**3.017.567**	**3.474.337**	**3.149.659**	**3.337.095**	**4.351.952**
Foreign trade + cabotage	**8.706.321**	**8.294.003**	**9.065.610**	**10.530.962**	**9.398.633**
General total	**11.723.887**	**12.442.449**	**12.215.269**	**12.767.909**	**13.750.585**

Expert Opinion: Arcan FAYATORBAY
SOCAR Terminal, COO, Turklim Board Member,
Container Working Group Chairman

CONTAINER SHIPPING IN THE EYE OF THE STORM

The sea always carries the whisper of a restless journey, full of turbulence and transformation. In 2024, the container shipping industry sailed through storms of uncertainty—grappling with geopolitical maelstroms, economic volatility, and mounting environmental pressures. Like a great maritime epic, the year unfolded as a story of resilience and recalibration amid crashing waves of supply-demand imbalances, inflationary pressure, and shifting trade routes.

Routes of the Changing World

If maritime transport is the lifeblood of global trade, 2024 saw its flow twisted and disrupted. Escalating Houthi attacks in the Red Sea forced vessels to reroute via the Cape of Good Hope, lengthening voyages and raising costs. The Suez Canal, once a vital artery, fell quiet—traffic plummeting by 90% compared to the previous year.

Climate change has driven a dagger into the heart of the Panama Canal. Ongoing drought is steadily draining Gatun Lake, the lifeblood of this engineering marvel. Lower water levels are preventing the passage of large ships. This water crisis is not just Panama's problem—it marks a global turning point in maritime transport. Reduced transit capacity has left massive vessels idling at anchor, with delays cascading through the world's supply chains. The Panama Canal remains a linchpin of global trade, but nature's unrelenting pressure casts a dense fog over its future.

These disruptions have increased global container ship demand by 12%, lengthening routes and sharply rising fuel costs. The impact rippled across the economy—shipping costs fed directly into inflation. The Shanghai Containerised Freight Index (SCFI), already volatile in 2023, remained unstable due to capacity constraints and geopolitical shocks.

The Ghost of Oversupply

Paradoxically, while voyage distances and demand both increased, the industry found itself grappling with an oversupply of ships. Years of aggressive fleet expansion bore fruit at an inopportune time. By 2026, the global container fleet is expected to be 46% larger than in 2019.

Historically, such growth has translated into lower freight rates and smoother trade flows. However, this time it coincides with economic uncertainty, slowing global trade, and weakening consumer demand—especially in China, the powerhouse of global shipping.

Despite a moderate projected cargo growth of 5.5% to 6.5% in 2024, the surplus looms large over market stability. Spot freight rates have experienced sharp fluctuations as carriers struggle to balance capacity management, cancelled sailings, and strategic pricing decisions.

Green Waves Rising

Even as the industry is battered by external shocks, a quieter revolution is unfolding below deck. Once an afterthought, sustainability is now a defining force reshaping global shipping. In 2024, environmental compliance became non-negotiable. The European Union's Emissions Trading Scheme (ETS) brought maritime transport under its umbrella, imposing steep costs on older, fuel-hungry vessels. The push toward decarbonisation has driven fresh investment in dual-fuel ships and alternative energy.

But this transition is not immune to financial storms. New environmental regulations restrict fleet flexibility, rendering some vessels commercially unviable. The rising costs of compliance—combined with the capital-intensive nature of green transport—threaten to widen the gap between large, well-capitalized players and small businesses struggling to survive.

The industry stands at the threshold of a new era—sustainability is no longer a choice, but a necessity.

Trade Winds Ahead

Where is the industry heading? The economic waves remain unpredictable. Inflationary pressures persist, consumer spending is weak in key markets, and political instability continues to reshape global trade flows. While demand for container shipping is expected to grow moderately—between 3.6% and 4.3% per year—the weight of uncertainty is still deeply felt.

Yet amid this turbulence, opportunities arise. The sector stands at a turning point where digitalisation, automation, and sustainability must be structurally integrated. The global container market, valued at $10.2 billion in 2024, is projected to grow steadily to $14.1 billion by 2031. Those who embrace efficiency, adapt quickly, and champion innovation will emerge as the new masters of this maritime saga.

As 2024 draws to a close, colossal container ships continue to traverse the world's oceans. Their bows cut through the waters of transformation, heralding a new era—one in which resilience, adaptability, and sharp foresight will become the keys to navigating the ever-evolving seascape of global trade.

Winds of Change: Container Transport in 2025

As the sun rises over the world's vast sea lanes in 2025, the global container shipping industry stands at a critical juncture. Geopolitical turbulence, economic restructuring, and the currents of technological ambition are crashing against the hulls of the world's largest vessels.

It is a moment filled with deep uncertainty—but also immense possibility; a true test of resilience for an industry that has long been the backbone of global trade.

Changing Geopolitical Balances

The re-election of U.S. President Donald Trump has cast a long shadow over global trade. New tariffs and port charges on Chinese-built vessels, introduced to limit China's maritime dominance, pose a significant threat to the global shipping landscape. These measures are not only reshaping trade routes but also increasing operating costs for shipping companies around the world. Shipping firms are being forced to reassess their strategies to adapt to this shifting political landscape.

At the same time, the Red Sea—long considered the lifeblood of trade—appears set to remain a flashpoint in 2025. Ongoing Houthi attacks continue to turn this vital corridor into a high-risk zone, forcing vessels to abandon the Suez Canal in favour of the much longer and costlier Cape of Good Hope route. The consequences are severe: increased fuel consumption, prolonged delivery times, and a maritime transport ecosystem weighed down by growing uncertainty.

Strategic Reorganisation: The Great Realignment

If one thing is certain in the changing seas of 2025, it is that the alliances governing container shipping are shifting. The breakdown of the 2M Alliance between Maersk and MSC has sent shockwaves through the industry and paved the way for new coalitions. Foremost among these is the strong new partnership between Maersk and Hapag-Lloyd: the Gemini Cooperation. Like tectonic plates moving deep beneath the surface, these strategic moves are preparing to reshape the industry's balance of power.

However, this restructuring is not free from tension. As new alliances form, competition is intensifying. Shipping giants are striving to deliver efficiency and reliability while preserving the profitability demanded by global markets. The industry is no stranger to change—but the scale of this transformation is extraordinary.

Market Volatility: Navigating Uncertain Waters

Amid these disruptions, financial performance presents a paradox. A.P. Moller-Maersk—long considered a bellwether of the shipping industry—reported stronger-than-expected profits in 2024, thanks to a sharp 38% increase in freight rates as geopolitical turmoil disrupted traditional trade lanes. The numbers speak for themselves. Yet even as profits surged, clouds of uncertainty linger. Global economic shifts, inflationary pressures, and volatility in consumer demand continue to raise questions about the sustainability of these gains.

According to IMF projections, the global economy is expected to grow by 3.2% in 2025 and 3.3% in 2026. Europe and Japan are gaining momentum, while the tide is turning against the U.S., China, and India. Despite extensive stimulus efforts, China continues to struggle with stagnant growth. In the U.S., a cooling labour market and weakening consumption are dampening economic activity. Germany is showing tentative signs of recovery after a prolonged stagnation, while interest rate cuts around the world aim to breathe life into global growth.

Regional divergences are becoming increasingly pronounced. Growth is expected to gain momentum in Oceania, South and Central America, and Sub-Saharan Africa, while Argentina's emergence from a prolonged economic downturn could deeply reshape regional dynamics. Global manufacturing is showing faint signs of revival, but the Eurozone continues to grapple with an industrial sector lost in the shadows.

While consumer confidence is on the rise in Europe, it remains adrift in uncertainty in the United States. Although retail sales in Europe show signs of recovery, they still lag behind past levels. In China, sluggish domestic demand may compel the government to take stronger action.

Amid these fragile dynamics, the global economy will continue to walk a tightrope between stability and uncertainty in 2025–2026. The course of the recovery will hinge on China's determination to rebound and the direction of U.S. consumer sentiment.

The threat of overcapacity is also looming large. Large-scale vessels ordered during the post-pandemic boom are now preparing to enter the market. If demand does not keep pace with this surge in supply, the industry could face a difficult period: excess capacity may drive freight rates downward and force global shipping companies into painful restructuring.

An Unwritten Future

As 2025 progresses, the container shipping industry finds itself in the midst of profound transformation. Routes once seen as guaranteed are now fraught with risk. Alliances that once stood stable are shifting. The economic certainties that once guided decisions have given way to a landscape shaped by deep uncertainty.

Yet amidst all this change, one truth remains: The world will always need shipping. Trade flows will persist—and those who guide these flows with vision and adaptability will shape the industry's future.

In this grand maritime symphony where geopolitical, economic, and technological forces converge, sector leaders must chart a course that is both cautious and bold.

The winds of change are blowing. The real question now is: who will harness them best?

3.4. Liquid Cargo Ports

In 2024, a total of 162.2 million tonnes of liquid bulk cargo were handled at Turkish ports. This volume included 76.7 million tonnes of imports, 31.9 million tonnes of transit cargo, 28.9 million tonnes of cabotage, and 24.4 million tonnes of exports (**Table 3.16**).

Table 3.16 Development of liquid bulk cargo by years. *

Years	Export	Imports	Cabotage	Transit	Total
2015	14.690.154	57.292.199	20.644.569	53.927.270	146.554.192
2016	11.555.158	59.213.777	18.522.994	55.732.438	145.024.367
2017	21.255.057	64.856.860	19.645.258	47.140.172	152.897.347
2018	7.097.622	58.727.643	21.484.957	52.406.847	139.717.069
2019	15.222.293	61.319.859	25.139.744	53.572.018	155.253.914
2020	10.798.291	59.112.900	26.943.079	49.798.126	146.652.396
2021	11.160.418	61.069.525	30.071.646	48.229.787	150.531.376
2022	15.629.517	69.612.852	35.197.141	50.761.639	171.201.149
2023	21.071.795	76.585.220	31.767.061	38.363.994	167.788.070
2024	24.467.266	76.778.722	28.977.814	31.991.186	162.214.988
% Change	16,2	0,3	-8,8	-16,6	-3,3

** General Directorate of Maritime Affairs-Department of Maritime Trade Development*

Compared to the previous year, the total volume of liquid bulk cargoes decreased by 3.3%. Within this category, exports increased by 16.1%, imports rose slightly by 0.3%, while transit cargo fell by 16.6% and cabotage cargo dropped by 8.8%.

Liquid bulk cargoes accounted for 30% of the total cargo handled at Turkish ports in terms of tonnage. There are 106 terminals in Türkiye that serve liquid bulk operations, including buoys, dolphins, and pipelines (**Figure 3.22**).

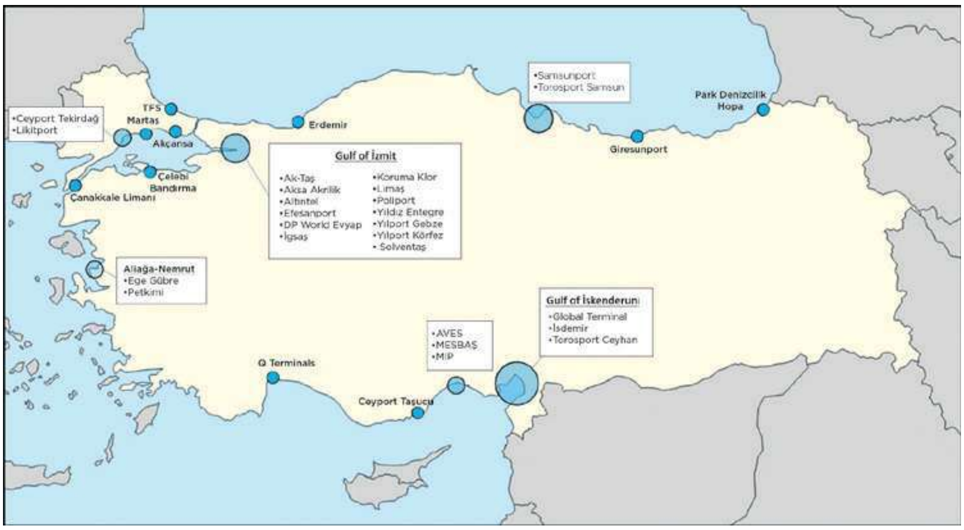


Figure 3.22 TÜRKLİM member ports with liquid cargo handling permits.

Among the TÜRKLİM member ports, Global Terminal Services, TFS Port, and AVES Warehousing handled the highest volumes of petroleum products. The volume of petroleum products handled by member ports increased by 35.6% compared to the previous year (**Table 3.17**).

Table 3.17 TURKLIM member ports handling petroleum products (tonnes)

Ports*	2020	2021	2022	2023	2024
GLOBAL TERMINAL SERVICES	2.211.605	1.626.455	3.355.717	7.413.133	8.483.830
TFS PORT	N/A	1.768.964	2.947.671	3.583.579	3.855.392
AVES	N/A	389.756	704.364	2.611	2.757.463
SOLVENTAS	1.276.305	1.164.193	1.194.357	1.335.276	1.450.327
LIMAS	N/A	306.621	398.068	491.060	952.500
POLIPORT	1.068.290	717.166	413.464	1.018.888	886.083
PETKIM	N/A	N/A	N/A	420.958	848.637
LIKITPORT	N/A	N/A	N/A	N/A	618.938
ALTINEL	511.476	540.353	480.542	465.035	450.458
MESBAS	N/A	361.494	422.918	20.002	318.702
TOROSPORT CEYHAN	509.590	267.928	5.439	461.146	62.535
HOPAPORT	N/A	N/A	N/A	N/A	42.462
ÇANAKKALE PORT	N/A	90.959	66.313	69.199	30.758
EGE GUBRE	N/A	13.796	13.910	11.022	8.818
MARTAS	N/A	N/A	N/A	N/A	7.933
TOTAL	**6.614.524**	**7.270.620**	**10.002.763**	**15.291.909**	**20.774.836**

** Total of TURKLIM member ports*

As for liquid chemical products, the leading TÜRKLİM member ports were TOROSPORT CEYHAN, LİMAŞ, and ÇELEBİ BANDIRMA (**Tables 3.18 and 3.19**).

Table 3.18 TÜRKLİM member ports handling liquid chemical cargo.

Ports	2020	2021	2022	2023	2024
TOROSPORT CEYHAN	1.008.805	1.153.100	1.230.106	1.125.764	1.174.356
LIMAS	995.307	1.305.266	1.167.804	920.972	898.105
CELEBI BANDIRMA	619.706	531.187	652.859	560.103	781.924
POLIPORT	658.804	737.255	713.073	804.351	660.244
SOLVENTAS	590.561	625.984	588.188	617.951	601.001
PETKIM	1.514.005	1.145.855	672.644	689.875	360.180
AKSA	279.527	333.589	347.480	353.101	308.120
LIKITPORT		26.655	234.988	195.221	288.393
KORUMA KLOR	129.042	132.430	173.573	206.000	246.905
ALTINTEL	378.5	228.528	232.469	232.672	232.836
MESBAS	398.59	388.494	218.956	20.890	198.704
EGE GUBRE	236.183	284.584	193.462	180.699	176.126
IGSAS	194.09	144.661	116.614	105.690	128.025
ISDEMIR	122.649	87.380	63.878	88.507	115.897
YILDIZ ENTEGRE	N/A	N/A	N/A	N/A	98.804
AKTAS	128.235	91.901	75.129	71.223	68.820
ERDEMIR	42.412	45.706	29.934	29.807	45.829
MARTAS	164.745	142.862	11.678	16.391	4.819
TOTAL	**8.840.257**	**8.145.509**	**7.340.177**	**6.537.580**	**6.389.090**

Liquid vegetable oils are considered in other liquid bulk cargoes (**Table 3.19**)

Table 3.19 TURKLIM member ports handling other liquid bulk cargoes (tonnes)

Ports*	2021	2022	2023	2024
MIP MERSIN	808.342	854.552	569.021	538.741
DP WORLD EVYAP	724.482	774.286	782.458	532.542
AVES WAREHOUSE	100.552	487.984	369.299	431.560
TOROS CEYHAN	N/A	280.397	208.876	281.994
CEYPORT TEKIRDAG	159.080	262152	288.390	226.231
EGE GUBRE	145.534	224.504	200.008	200.973
ALTINTEL	121.971	117.182	142.849	118.764
MESBAS	N/A	78.540	11.515	106.812
LIMAS	N/A	222.209	89.052	85.780
IGSAS	N/A	90.279	73.686	70.235
CELEBI BANDIRMA	22.900	59.467	79.337	52.141
GIRESUNPORT	N/A	N/A	20.361	44.108
SAMSUNPORT	N/A	55.025	18.889	21.883
MARTAS	N/A	N/A	N/A	6.296
ZEYPORT	N/A	6057	5.277	5.996
TOTAL	**2.082.861**	**3.512.634**	**2.859.018**	**2.724.055**

** Total of TÜRKLİM Ports*

Expert Opinion: Dr. Selçuk DENİZHAN
Poliport Kimya San. ve Tic. A.Ş. - General Manager
TÜRKLİM Board Member and Chairman of
Liquid Bulk Working Group

THE STRATEGIC ROLE AND THE FUTURE VISION OF TÜRKİYE IN LIQUID BULK

Thanks to its strategic geographical location and robust port infrastructure, Türkiye functions as a key regional logistics hub for liquid cargo transport. Terminals that handle various liquid cargoes—such as petroleum derivatives, chemical products, liquefied natural gas (LNG), and industrial liquids—not only meet domestic market demands but also play a vital role in transit trade. Ports located in industrial and logistics centres such as Kocaeli, Izmir, Mersin, and Hatay undertake a significant share of these operations.

Port operators in Türkiye are continuously enhancing their safety and environmental management systems to ensure compliance with international standards in liquid cargo operations. Given the risks associated with transporting chemicals and hazardous materials, process safety has become increasingly critical. In this context, international standards and documentation—such as API, NFPA, ADR, and ISGOTT—are applied throughout the design, maintenance, and operational phases of terminals. These standards cover topics including safety in road transport, automated monitoring and intervention systems, and advanced fire prevention mechanisms. Compliance with these standards is rigorously audited. Continuous improvement initiatives in process safety aim to enhance the security of all elements that impact operational integrity.

Future Outlook and Sectoral Expectations

Global energy crises, geopolitical developments, and shifts in supply chains are directly influencing liquid cargo operations in Türkiye. The reconfiguration of Europe's energy sourcing following the Russia-Ukraine war has increased interest in Türkiye's LNG and petroleum terminals. Simultaneously, the rise in China's chemical production is reshaping global liquid cargo flows. China's petrochemical sector expansion is creating new opportunities while intensifying competition in European and Middle Eastern markets.

Three major factors are expected to shape the future of liquid cargo transport:

The direction of global trade, changes in energy markets, and Türkiye's climate change mitigation strategy. In this regard, the International Maritime Organization (IMO) has implemented regulations to reduce carbon emissions in maritime transport. The IMO's 2023 and 2050 frameworks have established decarbonization as a sectoral priority.

Türkiye supports sustainable transport in line with its Climate Change Mitigation Strategy and Action Plan by prioritizing emission reduction, energy efficiency, alternative fuel use, and digitalization within the maritime sector. Furthermore, the Green Port Certificate program promotes environmental performance improvements through sustainability criteria such as the use of energy-efficient equipment, shore power connections (Onshore Power Supply), and effective waste management.

Digitalization plays a critical role in enhancing the efficiency and safety of port operations. Smart port systems, digital data analytics, and Internet of Things (IoT) applications help optimize operational workflows, detect potential risks, and accelerate response measures.

Cost Management and Competitiveness: In recent years, rising logistics costs, fluctuating energy prices, and increasing labor costs have pressured liquid cargo terminals to develop more cost-effective operational solutions. In addition to leveraging alternative financing models and investment incentives, increasing storage capacity and expanding intermodal transport solutions are key to achieving competitive advantage.

To maintain its regional leadership in liquid cargo transport, Türkiye must continuously modernize its port infrastructure. Authorities should facilitate capacity expansion investments, accelerate digital transformation, and increase sustainability-focused investment initiatives.

In conclusion, liquid cargo operations in Türkiye are being reshaped in response to the global energy transition, developments in the chemical industry, and green reconciliation processes. Efforts to modernize port infrastructure support the strategic objective of delivering sustainable, efficient logistics solutions while boosting sectoral growth and international competitiveness.

3.5. Wheeled Cargo Ports

Wheeled cargo transport in Türkiye is analysed under three main categories. The first includes TIR trucks, lorries, and trailers operating in international liner services. RO-RO transport, which enables cargo to reach its destination market in a short time, is concentrated in the ports of the Black Sea, Marmara, and Aegean regions. RO-RO is preferred when cargo continues its journey by road after a short sea voyage. The second group covers new vehicle logistics. Vehicles manufactured domestically are shipped to global markets via Turkish ports, while foreign-manufactured vehicles arrive in Türkiye through maritime transport. The automotive industry—mostly clustered in the Marmara Region—plays a key role in the Turkish economy, especially in the export of passenger, light commercial, and commercial vehicles. The third group includes vehicles transported on cabotage lines, especially in the Marmara and Çanakkale regions.

Among all cargo types, wheeled cargo represents the smallest share in terms of tonnage. In Türkiye, 29 ports handle wheeled cargo (**Figure 3.23**).

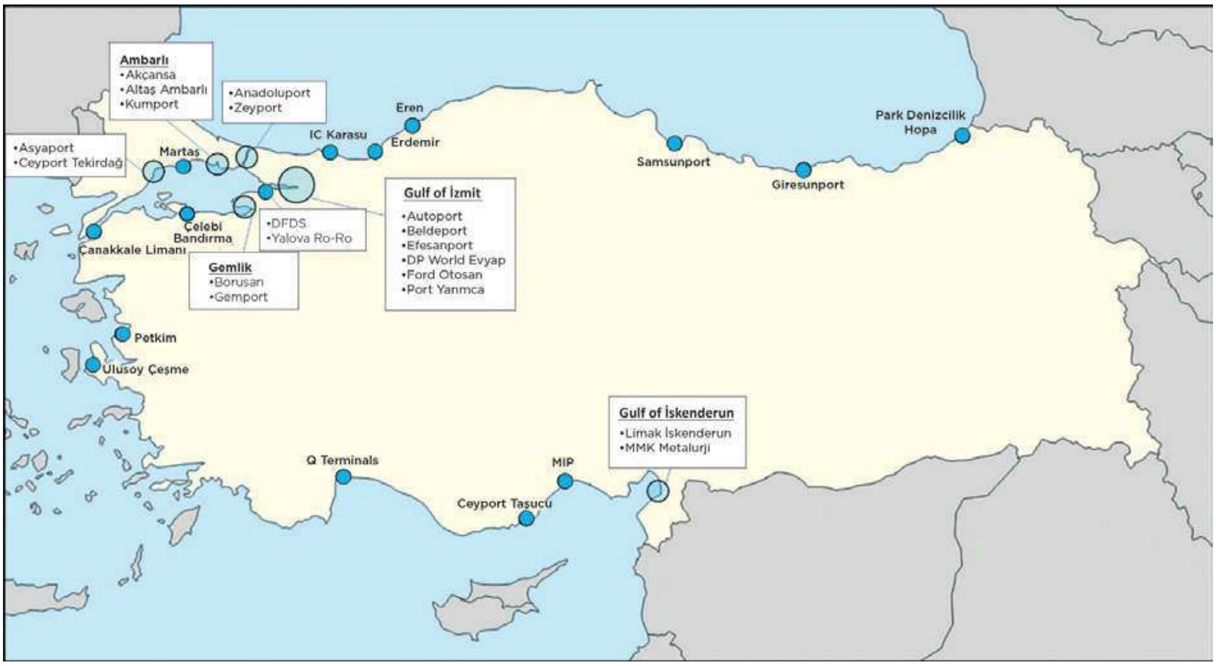


Figure 3.23 TÜRKLİM member ports with permission for wheeled cargo handling.

•RO-RO taşımaları

In 2024, 706,387 vehicles were handled through international regular RO-RO lines in Türkiye—an increase of 0.22% (1,583 vehicles) from the previous year (**Figure 3.24**). Over the last three years, international RO-RO transport has consistently remained above 700,000 vehicles, despite minor fluctuations.

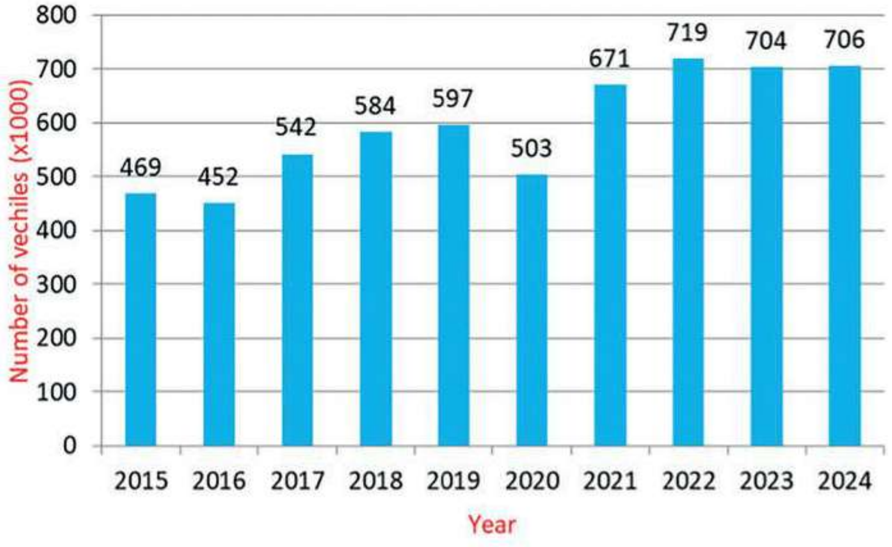


Figure 3.24 Ro-Ro transports (Vehicle)

RO-RO services are primarily (47%) directed toward Trieste, Italy (**Figure 3.25**). By 2024, Trieste-bound shipments—most of which were conducted through TÜRKLİM member ports—exceeded 333,000 vehicles (**Table 3.20**).

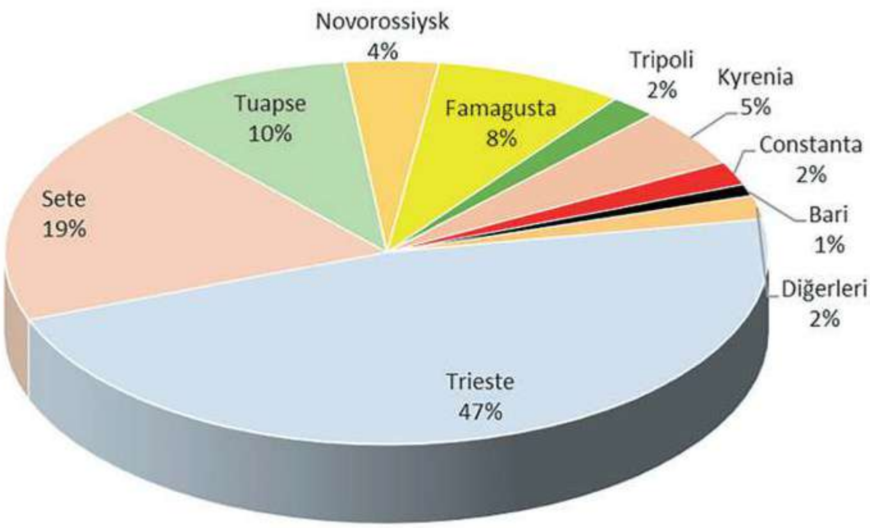


Figure 3.25 Shares of foreign ports where Ro-Ro transport is carried out.

There are regular RO-RO services between 15 Turkish ports and 19 foreign ports (**Table 3.20**). The top three ports for regular RO-RO services abroad are Tuzla (191,000 vehicles to Trieste), Yalova (129,000 vehicles to Sète, France), and Samsun (44,000 vehicles to Tuapse). TÜRKLİM member ports handled 98% of the vehicles shipped abroad via regular RO-RO services.

Table 3.20 Ro-Ro statistics on the basis of regular international routes. *

Lines*	Incoming Vehicle	Outgoing Vehicle	Total Vehicle
Tuzla (Pendik) - Trieste	100.782	91.096	191.878
Yalova - Sete	67.351	62.161	129.512
Cesme - Trieste	33.638	33.903	67.541
Mersin - Trieste	30.350	29.236	59.586
Mersin - Famagusta	27.132	27.252	54.384
Samsun - Tuapse	22.233	22.532	44.765
Tasucu - Kyrenia	14.306	17.730	32.036
Samsun - Novorossisk	10.159	16.261	26.420
Karasu - Tuapse	5.311	13.020	18.331
Tasucu - Tripoli (Lebanon)	7.217	6.922	14.139
Karasu - Constanța	4.064	6.066	10.130
Tuzla (Pendik) - Bari	4.463	5.397	9.860
Ambarli - Trieste	2.846	3.893	6.739
Istanbul - Tuapse	2.141	4.283	6.424
Tuzla (Pendik) - Bari	3.740	2.497	6.237
Yalova - Trieste	200	5.354	5.554
Izmir - Sete	999	3.422	4.421
Mersin - Haifa	1.954	2.198	4.152
Mersin - Kyrenia	2.030	366	2.396
Tekirdag - Trieste	302	1.613	1.915
Tasucu - Famagusta	1.535	74	1.609
Cesme - Chios	309	1.167	1.476
Iskenderun - Haifa	487	375	862
Gemlik - Marseille	0	550	550
Zonguldak - Tuapse	40	501	541
Tekirdag - Sete	0	529	529
Karasu - Novorossisk	8	454	462
Kocaeli - Vigo	367	4	371
Ambarli - Patras	249	72	321
Istanbul - Vigo	319	0	319
Kocaeli - Antwerp	208	39	247
Gemlik - Novorossisk	227	0	227
Istanbul - Jeddah	0	227	227
Mersin- Jeddah	0	165	165
Mersin- Aqaba	0	139	139
Kocaeli - Barcelona	0	138	138
Iskenderun - Aqaba	0	129	129
Kocaeli - Zeebrugge	0	112	112
Izmir - Constanta	0	102	102
Other Ro-Ro Lines	566	875	1.441
Total	**345.533**	**360.854**	**706.387**

** Republic of Türkiye Ministry of Transport and Infrastructure*

In 2024, the total number of internationally transported vehicles handled at Turkish ports decreased by 1.9% to 2,015,694. Of this volume, 70.6% was handled by TÜRKLİM member ports (**Table 3.21**).

Table 3.21 Overseas connected vehicle handling in our ports. *

Ports	Total 2022	Total 2023	Incoming Vehicle	Outgoing Vehicle	Total 2024
PORT YARIMCA	122.980	398.323	197.496	187.667	385.163
AUTOPORT	300.916	338.659	130.250	232.816	363.066
EFESANPORT	103.819	167.539	169.930	3	169.933
FORD OTOSAN	214.696	165.203	779	93.104	93.883
BORUSAN	177.967	220.437	6.600	161.249	167.849
GEMPORT	160.548	134.864	43.242	100.992	144.234
CEYPORT TASUCU	27.627	36.365	19.278	19.974	39.252
MIP	11.253	9.363	12.009	5.083	17.092
YALOVA RO-RO	N/A	710	13.273	0	13.273
ULUSOY FOUNTAIN	N/A	7.224	5.943	6.344	12.287
CEYPORT TEKIRDAG	N/A		5.659	830	6.489
KARASU	569	407	1.029	3.930	4.959
LIMAKPORT	50.907	1.063	3.929	0	3.929
BODRUM	708	1.185	622	681	1.303
SAMSUNPORT	341	399	13	542	555
TURKLIM Total	**1.172.331**	**1.481.741**	**610.052**	**813.215**	**1.423.267**
TCDD Haydarpasa Port	404	45.524	79.325	8.456	87.781
TCDD Alsancak Port	4.538	4.711	2.047	1.431	3.478
Public Total	**4.942**	**50.235**	**81.372**	**9.887**	**91.259**
Other Private Ports	426.971	523.174	230.346	254.884	485.230
Other Private Ports Total	**426.971**	**523.174**	**238.377**	**262.791**	**501.168**
Total	**1.604.244**	**2.055.150**	**929.801**	**1.085.893**	**2.015.694**
TURKLIM Share	**%73,1**	**72,1%**	**65,61%**	**74,89%**	**70,61%**

** General Directorate of Maritime Affairs-Department of Maritime Trade Development*

• Finished vehicle handling for foreign trade

All ports with the highest volumes in automotive foreign trade are located in the Marmara Region. The leading ports in finished vehicle handling are Port Yarımca, Autoport, Efesan Port, Borusan, and Gemport, respectively. In 2024, automotive foreign trade through TÜRKLİM member ports decreased by 4.6% compared to the previous year, with a total of 1,569,093 finished vehicles handled (**Table 3.22**).

Table 3.22 Vehicle import and export figures by port.

Ports	Internal Transit	Issuance	Imported	Total
PORT YARIMCA	93.127	159.954	153.353	406.983
AUTOPORT	0	219.183	136.833	365.066
EFESAN PORT	0	3	184.544	184.547
BORUSAN	9.668	157.741	4.087	171.524
GEMPORT	0	114.762	52.629	167.391
FORD OTOSAN	0	88.611	779	89.390
AKCANSA (AMBARLI)	49.567	6.391	5.346	61.304
MERSIN	1.511	26.684	31.770	60.440
DFDS	0	9.095	12.801	21.896
CEYPORT TEKIRDAG	5.400	4.029	5.931	15.360
YALOVA RO-RO	0	0	14.566	14.566
LIMAK ISKENDERUN	3.694	0	741	4.435
SAMSUNPORT	0	3.355	71	3.711
MARTAS	0	2.142	338	2.480
TOTAL	**162.967**	**791.950**	**603.789**	**1.569.093**

• **Number of vehicles and passengers carried on cabotage lines**

In 2023, 9.3 million vehicles were transported on cabotage routes. In 2024, this figure rose by 19.9%, exceeding 10 million vehicles (**Table 3.23** and **Figure 3.26**).

Table 3.23 Number of vehicles transported on the cabotage line.

Year	Vehicle	% Change
2015	13.042.399	7,2
2016	13.050.241	0,1
2017	12.638.289	-3,2
2018	13.159.820	4,1
2019	13.420.802	2,0
2020	10.892.467	-18,8
2021	12.619.473	15,9
2022	10.958.382	-13,2
2023	9.334.763	-14,8
2024	10.259.903	9,9

** Republic of Türkiye Ministry of Transport and Infrastructure*

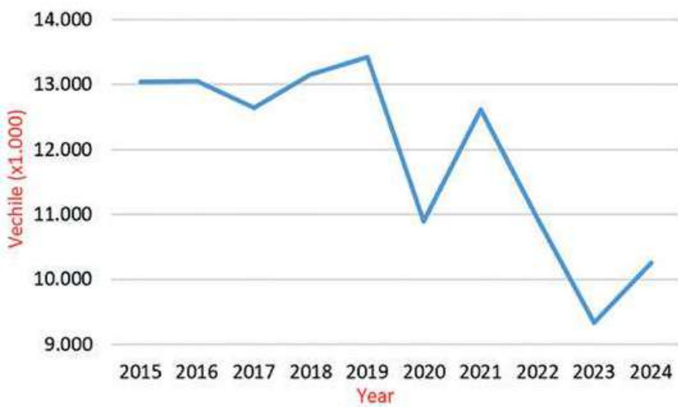


Figure 3.26 Change in the number of vehicles transported on the cabotage line.

Expert Opinion: Bilgin İŞLER
Autoport Terminal Operators S.A.- General Manager
TÜRKLİM Board Member and Chairman of Ro-Ro & Automotive Working Group

RO-RO PORTS, WHEELED FREIGHT LOGISTICS, AND THE AUTOMOTIVE SECTOR IN TÜRKİYE: A PORT-CENTRIC FUTURE VISION

Türkiye is a strategic actor in the logistics sector due to its critical position between Europe and Asia. Significant progress has been achieved so far with ports and hinterland facilities integrated into regions where the automotive market is concentrated. However, as we shape the future, we must move beyond seeing ports merely as transshipment points and reposition them as integrated logistics hubs.

Over the past five years, the logistics industry has been hit by major crises while also encountering profound transformation opportunities. The pandemic, chip shortages, supply chain disruptions, material scarcities, and geopolitical tensions have reshaped the sector drastically. The global halt in production and damage to logistics networks during the pandemic triggered a reverse wave, putting traditional transport and inventory policies, as well as "just-in-time" production models, under scrutiny. Chip shortages and other material deficits triggered sharp fluctuations in vehicle production and ushered in a new era that transformed logistics demand. The Russia–Ukraine war and other geopolitical risks altered trade flows between Europe and Asia, elevating Türkiye's prominence both as a production base and a transit hub. As the global supply chain is being restructured, Türkiye must seize the opportunity to become one of its main players.

In automotive logistics, in addition to ports that provide temporary storage, distributor storage centers and backfield storage areas also play a vital role. However, recent fluctuations and volatility in the automotive market have strained port capacities. Unpredictable stock level changes directly affect port operations, while bottlenecks in backfield areas and delays in transportation processes threaten efficiency. Moreover, Ro-Ro ports and finished vehicle logistics are not limited to maritime transport alone. Without strong land connections and a robust transport chain, port efficiency is unattainable. In Türkiye, the average age of truck fleets now exceeds 17 years, increasing both operating costs and carbon emissions. Furthermore, the driver shortage is becoming an escalating crisis. The average age of drivers with international transport certifications is now over 50, and the younger generation is not drawn to the profession or prioritizing it in career choices. High operating costs and challenging working conditions are compounding a serious human resource problem in the logistics sector. While autonomous transport may be the future, it is not a realistic solution to today's crisis. In summary, ports must be regarded not only as storage areas but as dynamic logistics centers where flow must be accelerated. Backfield capacities, road transport, and port efficiency must be addressed holistically. Aging fleets and a lack of qualified drivers pose serious threats to port operations.

The aggressive entry of Far Eastern automotive brands into the European market is likely to shift the direction of logistics flows. As traditional manufacturers in Europe seek to optimize supply chains, Türkiye has the potential to play a pivotal role as a logistics hub. This strategic posture by Chinese producers may spur the emergence of alternative logistics routes between the Far East and Europe, positioning Türkiye at the heart of new corridors. In this evolving order, whoever controls logistics will also steer the flow of global trade. Moreover, some major Chinese automotive companies have recently started to consider Türkiye not just as a transit location, but as a potential production base. This emerging trend signals that Türkiye may play a more active role not only in import/export traffic but also in direct production activities. If such production investments materialize, it will place new pressure on port capacities, backfield storage areas, and road transport systems. The potential for new factories to be located away from existing logistics clusters and distant from ports and storage facilities is another critical factor. This could burden current transport networks and necessitate the establishment of new corridors. At the same time, it may offer the opportunity to extend Türkiye's logistics infrastructure to wider geographies, promote regional development, and facilitate the creation of new logistics hubs. In sum, Türkiye is a key link in the global automotive production chain, and future production investments will reshape the country's ports and logistics infrastructure. If these investments occur outside of current clusters, they will generate both new opportunities and new challenges.

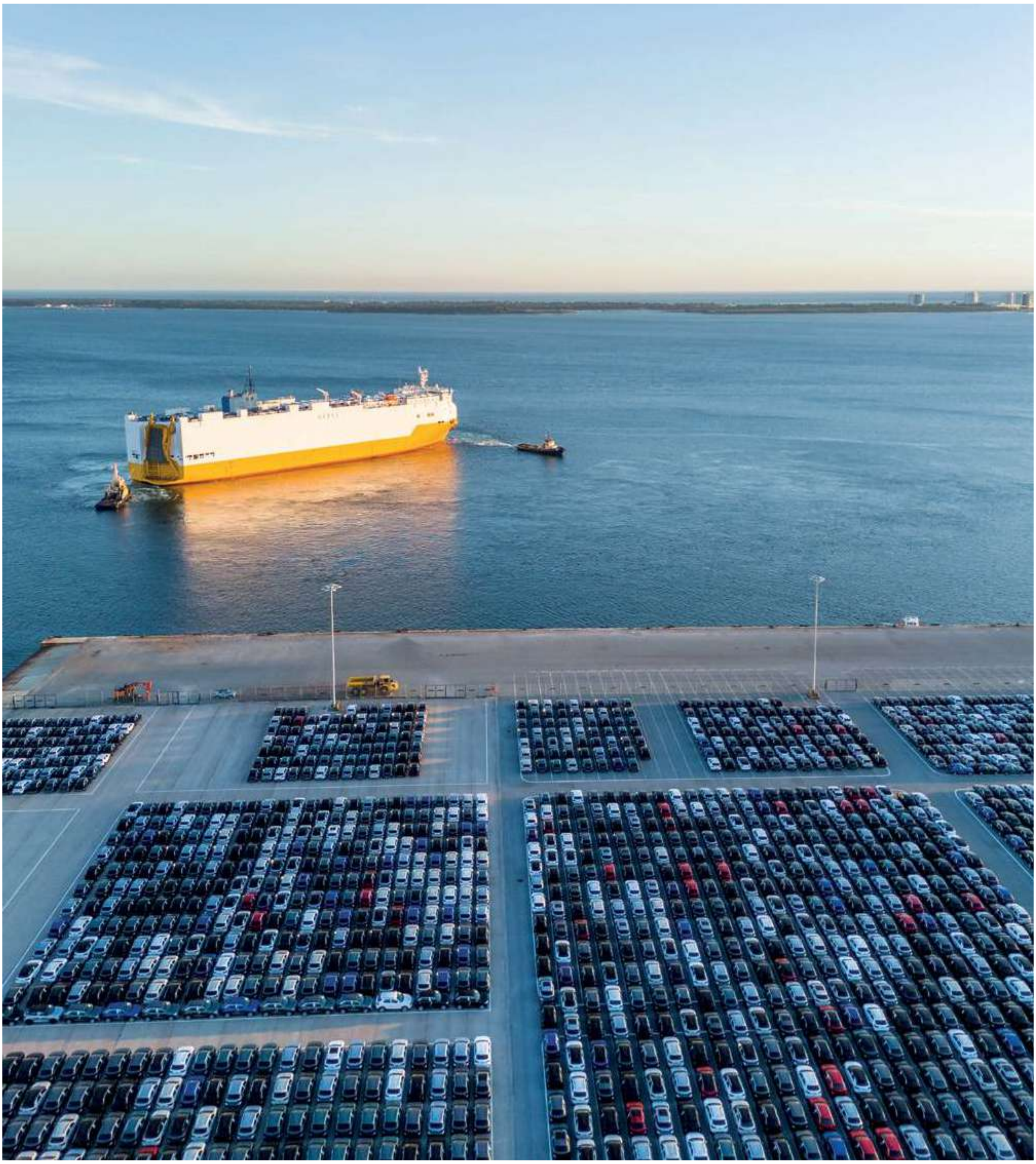
Automotive logistics in Türkiye is directly dependent on the capacity and efficiency of Ro-Ro ports. However, at this stage, ports must be evaluated not only by their existing capacities but also by the added value they bring to the logistics chain. To manage finished vehicle logistics with zero errors and maximum efficiency, digitalisation, system integration, and advanced data tracking and archiving mechanisms are becoming essential. We must digitalise our ports further and enable error-free logistics systems.

In finished vehicle logistics, strengthening port-connection roads and hinterland infrastructure are critical factors influencing port efficiency. The introduction of intermodal logistics terminals confirms that ports are not limited to maritime transport alone. Effective integration of road, rail, and Ro-Ro networks has the potential to revolutionize port operations. At this stage, seamless connectivity between ports, storage centers, and inland terminals is crucial.

In the future, ports will be evaluated not only by volume growth but also by their ability to meet net-zero carbon emission targets. Ro-Ro ports must transition to electrification powered by renewable energy and adopt carbon-neutral operating models. The green port concept will be the cornerstone for integrating automotive logistics into a zero-carbon economy. We must strive for bluer seas and greener logistics.

Moreover, the strength of a port is not only defined by its infrastructure investments but also by the global-standard human capital that manages it. We must invest in training highly qualified professionals who can maximize port performance. Today, there is an increasing need for visionary logistics professionals who are specialized in port operations, adept with technology, attuned to sustainable logistics, and adaptable to digital transformation. However, this field is still widely viewed as one learned through on-the-job experience. This mindset must change. Education pathways should be restructured to meet global standards, and port management and operations should be established as a professional career path. In short, we must invest in the people who manage ports just as much as we invest in the ports themselves.

To conclude, Türkiye must achieve a strong and competitive position in the global logistics arena with its ports, hinterland links, road transport, and digitalisation strategies. Ports must evolve beyond simple loading-unloading points into highly efficient logistics centers. New production investments indicate that Türkiye can become not just a transit hub, but a critical production and distribution center in the global automotive market. However, this transformation will only be possible by expanding port capacities, eliminating road transport bottlenecks, managing backfield storage efficiently, and building logistics networks integrated with intermodal transport. Strategic consortia between ports, shipowners, and logistics providers should be established. Türkiye must proactively prepare for the logistics vision of the future by embracing sustainable and eco-friendly solutions, committing to carbon-neutral targets, and adopting digitalized operations. Those who invest in ports today will manage the trade of tomorrow; those who shape the future—not just wait for it—will be the ones who succeed.



3.6. Passenger Ports

Cruise ports and terminals are coastal infrastructure facilities that serve maritime tourism as a part of the transport sector. A total of 27 ports in Türkiye provide services to passenger and cruise ships (**Figure 3.27**).

Figure 3.27 TURKLIM member ports with passenger handling permits.

Passenger movements at our ports are evaluated separately under cruise and cabotage activities.

• Kruvaziyer limanlarımızdaki gelişmeler

Although the cruise industry accounts for only 2% of the overall travel and tourism sector, cruise capacity is expected to grow by at least 10% over the next five years (2024–2028). In 2024, the global cruise market surpassed 35 million passengers, showing a faster recovery than other travel and tourism segments (CLIA, 2024). The positive developments in the global sector have also been reflected in Türkiye.

Since 2020, the number of cruise ships and passengers calling at our ports has been increasing, reaching the highest cruise passenger count of the last decade in 2024. That year, the number of passengers per cruise ship calling at our ports reached an all-time high of 1,591 passengers/ship. Although the number of cruise ships visiting our ports in 2024 was nearly the same as the previous year (1,192 ships in 2023 and 1,195 ships in 2024), the total number of cruise passengers increased by 22.5% (346,904 passengers), reaching 1,889,426 passengers (**Figure 3.28**).

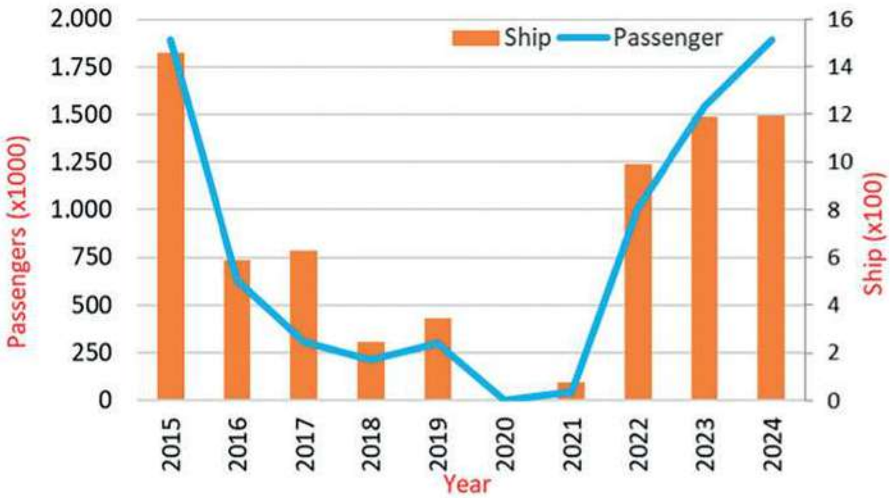


Figure 3.28 Change in the number of cruise ships and passengers.

In 2024, Kuşadası Port Authority ranked first with 524 cruise ship calls and 821,000 passengers. Kuşadası was followed by Istanbul Port Authority with 204 ships and 439,000 passengers, and Izmir Port Authority with 66 ships and 171,000 passengers (**Table 3.24**).

Table 3.24 Number of passenger ships and passengers on the basis of our Port Authorities. *

Port Authority	2023		2024	
	Ship	Passenger	Ship	Passenger
Kusadasi	531	779.434	524	821.748
Istanbul	225	402.729	204	439.968
Izmir	31	38.500	66	171.614
Basement	97	101.159	97	118.053
Marmaris	23	26.347	45	116.873
Fountain	76	52.030	73	53.967
Antalya	26	34.423	22	29.317
Samsun	4		29	27.427
Trabzon	21	15.785	29	26.947
Amasra	20	14.962	26	25.116
Alanya	18	19.119	15	19.873
Canakkale	40	19.672	28	18.241
Others	80	35.099	37	20.282
Total	**1.192**	**1.542.522**	**1.195**	**1.889.426**

** General Directorate of Maritime Affairs-Department of Maritime Trade Development*

The number of passengers arriving at TÜRKLİM member ports via passenger ships and ferries increased by 8% compared to the previous year, exceeding 1.7 million in 2024 (**Table 3.25**).

Table 3.25 Passenger handling at TURKLIM member ports.

Ports	Passenger		
	Passenger Ship	Ferry	Total Passenger
Ege Port - Kusadasi	821.141	198.606	1.019.747
Bodrum Cruise Port	118.085	136.865	254.950
Ceyport Tasucu	0	240.556	240.556
Ceyport Tekirdag	0	87.569	87.569
Q Terminals Antalya	29.300	0	29.300
Samsunport	26.771	0	26.771
Mersin	22.409	3.647	26.056
Canakkale Harbour	17.742	0	17.742
Total	**1.035.448**	**667.243**	**1.702.691**

• **Passenger transport in cabotage**
In 2024, the number of passengers travelling on cabotage routes remained steady compared to the previous year, ending the year at 117.8 million passengers (**Table 3.26** and **Figure 3.29**).

Table 3.26 Passenger transport statistics on cabotage routes*

Year	Passenger
2014	161.048.004
2015	163.723.544
2016	148.101.589
2017	137.195.691
2018	139.556.332
2019	150.312.216
2020	85.866.238
2021	85.866.238
2022	126.204.029
2023	119.512.485
2024	117.832.340

** General Directorate of Maritime Affairs-Department of Maritime Trade Development*

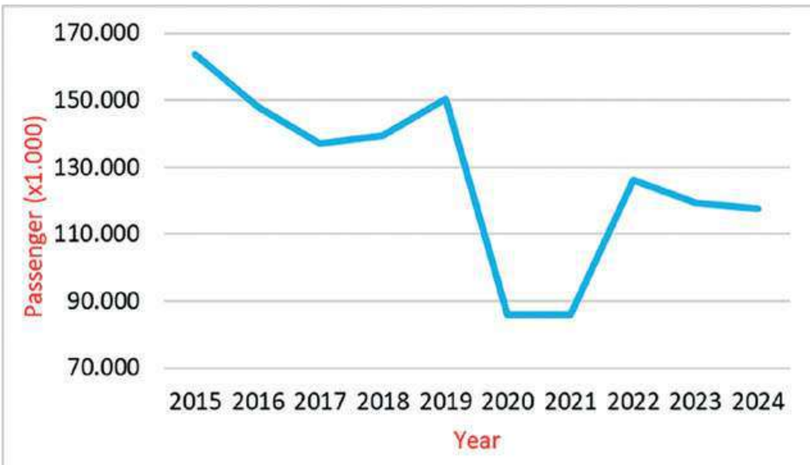


Figure 3.29 Change in the number of passengers carried on the cabotage line.

Expert Opinion: Aziz GÜNGÖR
Global Ports Holding - Eastern Mediterranean Ports Regional Director
TÜRKLİM Board Member, Chairman of Passenger Working Group

TURKISH CRUISE SECTOR: CURRENT STATUS AND FUTURE OUTLOOK

In recent years, global cruise tourism has rebounded rapidly following the pandemic, reaching record-breaking levels. In 2023, the number of cruise passengers worldwide surpassed pre-pandemic levels to reach 31.5 million, and by 2024, this figure exceeded 34 million. In 2025, it is projected to reach 36 million passengers, with the sector expected to generate an economy of $155 billion. Türkiye is also benefitting from this upward trend and continues to maintain its position as a significant and popular cruise destination.

Türkiye holds great potential for cruise tourism with its rich historical and cultural heritage, unique natural attractions, and strategic geographic location. Kuşadası remains one of the most important ports of call in the Eastern Mediterranean due to its proximity to iconic sites such as the ancient city of Ephesus and the House of the Virgin Mary. Istanbul, thanks to Galataport's increasing capacity to host mega cruise ships, has reemerged as a strong cruise hub. Destinations such as Bodrum, Çeşme, İzmir, Marmaris, and Black Sea ports are also increasingly being incorporated into cruise itineraries with growing interest.

However, the Eastern Mediterranean cruise market—where Türkiye is located—continues to be directly affected by geopolitical tensions in the region. Ongoing conflicts in the Middle East, security issues in the Red Sea, and persistent geopolitical risks in the Black Sea region are constraining growth dynamics and suppressing Türkiye's sectoral growth potential.

In 2024, Türkiye hosted 1.9 million cruise passengers through approximately 1,200 cruise ship calls at 17 ports. In contrast, our competitor Greece, with 55 ports receiving cruise ships, reached a cruise market nearly three times the size of Türkiye's by hosting more than 6 million cruise passengers.

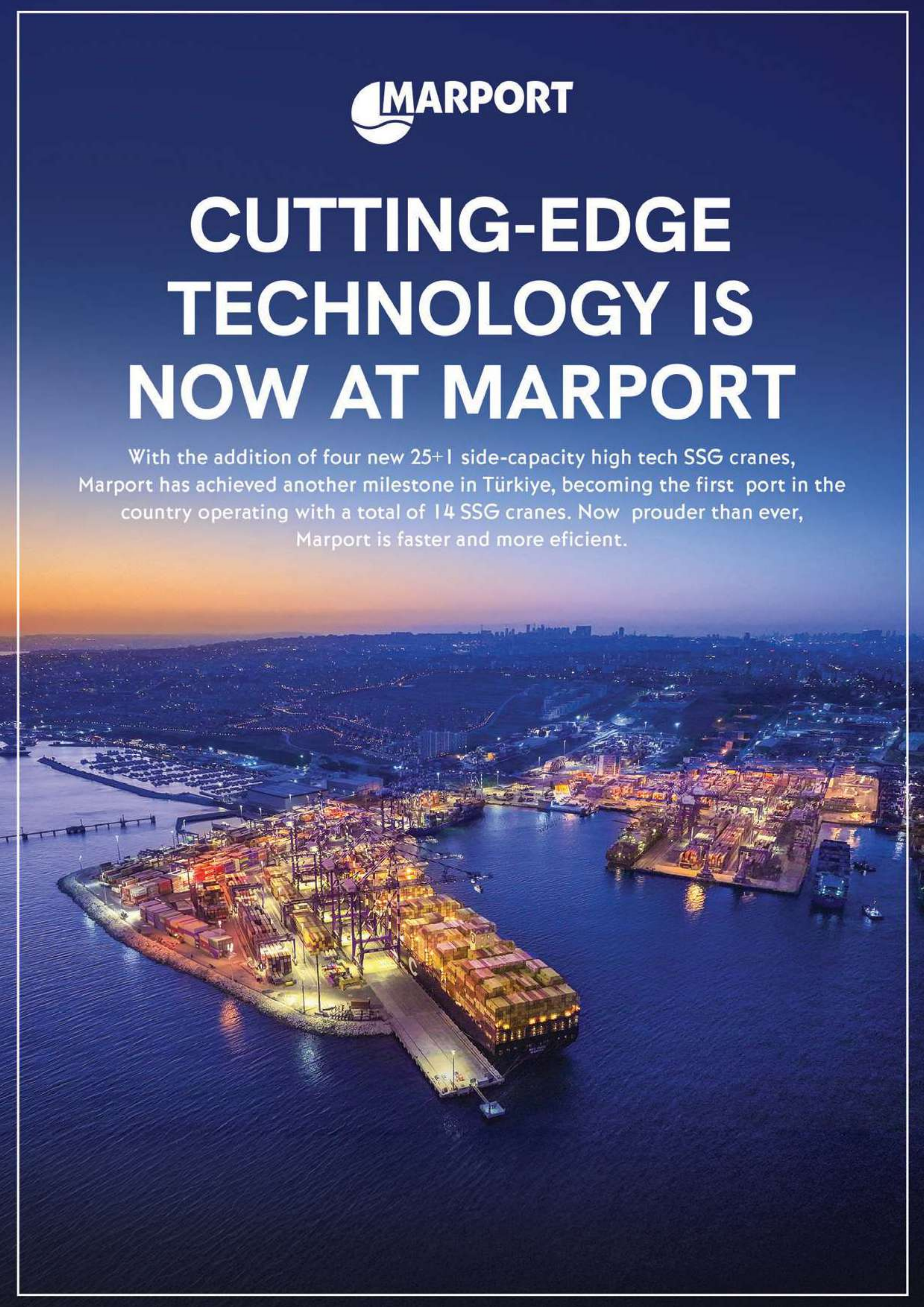
Looking ahead, to increase its market share in cruise tourism, Türkiye must prioritise the development of new destinations, upgrade port infrastructure, and invest in environmentally friendly technologies. The planned construction of a new cruise port in Istanbul's Yenikapı district will be a critical step toward enhancing Türkiye's main port operations. Similarly, positioning Antalya as a homeport hub could significantly strengthen Türkiye's competitiveness in the region. Strategic focus should also be placed on developing cruise port infrastructure in high-potential destinations such as Çanakkale and Fethiye. Moreover, Black Sea coastal ports must be equipped with appropriate piers, berths, and passenger terminals to prepare them for cruise operations in the future.

For the long-term sustainability of the sector, it is essential to promote eco-friendly practices, expand onshore power supply systems for cruise vessels, and adapt ports to meet green transformation requirements. Furthermore, Türkiye should promote and develop its own cruise lines and domestic ship management capacity, which would increase both the direct and indirect economic contribution of cruise tourism and strengthen the country's tourism revenues.

Historically, Türkiye recorded its highest number of cruise passengers in 2013, with 2.3 million passengers. The goal for 2025 is to surpass this pre-pandemic record in cruise tourism. It is our strongest hope that our country exceeds this milestone and sets a new all-time record in 2025.

CHAPTER 4

SAFE and SECURE PORTS


MARPORT
CUTTING-EDGE TECHNOLOGY IS NOW AT MARPORT
With the addition of four new 25+1 side-capacity high tech SSG cranes, Marport has achieved another milestone in Türkiye, becoming the first port in the country operating with a total of 14 SSG cranes. Now prouder than ever, Marport is faster and more eficient.

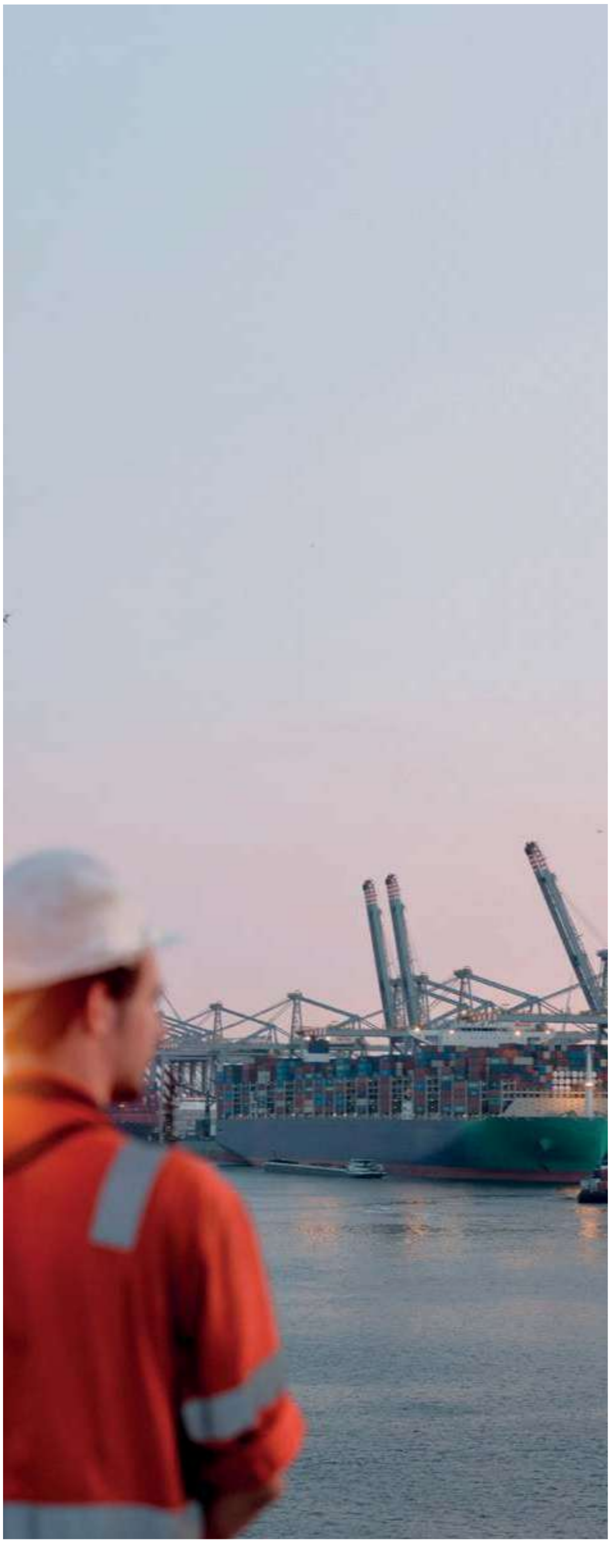
CHAPTER 4: SAFE AND SECURE PORTS

4.1. Safety and Security in Maritime

According to the Turkish Language Association (TDK), the Turkish word "emniyet" translates to "safety" or "protection" in English, whereas "güvenlik" is defined as the uninterrupted functioning of the legal order in society and the ability of individuals to live without fear. As a result, these two terms are often used interchangeably in everyday language. In English, however, the terms safety and security—used to translate "emniyet" and "güvenlik", respectively—carry distinct meanings, as outlined in the Oxford Dictionary. Accordingly, safety refers to protection from danger, risk, or injury—or the possibility of causing them—while security implies a state of being free from danger or threat. In both Turkish and English, the concepts of safety and security in the maritime domain are closely related but conceptually distinct. The fundamental difference between the two can be summarized as follows: Security concerns protection against deliberate, planned, and malicious actions by individuals or groups, while safety relates to protection from unintentional, unforeseen, and involuntary risks arising beyond the normal course of life.

As illustrated, the definitions of safety and security are clearly and distinctly separated. To clarify this with a simpler example: an electrical fire that carries a risk of occurrence due to a voltage fluctuation is sought to be prevented through safety measures, whereas a fire that may arise from sabotage or arson is intended to be prevented through security measures.

Maritime safety encompasses technical and operational measures taken to prevent accidents and to protect human life, ships, and cargo. These measures are generally implemented against natural forces, technical failures, or human error. The installation of fire extinguishing systems in ports to prevent fires, and the organization of regular fire drills for port employees, are examples of safety measures. Similarly, the safe storage of



hazardous materials is among the common safety precautions taken in ports. Measures implemented against earthquakes—both during the planning and operational phases—are also classified as safety measures, since earthquakes are natural disasters. These include constructing infrastructure and superstructure in accordance with earthquake regulations, organizing emergency evacuation drills in case of an earthquake, and employing early warning systems.

Maritime security covers measures taken against intentional, human-induced threats such as piracy, terrorism, smuggling, and theft. Security measures are implemented to prevent illegal or hostile activities. These include cargo security scans conducted in ports, detection of suspicious cargo and individuals, and control of entry and exit points. Inspection of cargoes using X-ray scanners and the deployment of specially trained detector dogs to combat drug trafficking are also among these measures. In addition, protecting port operation systems against cyber-attacks is one of the critical issues associated with maritime security.

Among all modes of transport, air and maritime transport maintain the highest levels of safety and security measures. Ports, which serve as the starting and ending points of maritime transport, also represent the first and most critical step in ensuring safety and security. The measures implemented in ports address not only port-specific risks but also certain risks that vessels may encounter during their voyages. For example, the unauthorized boarding of a stowaway, or the covert loading of an explosive device intended to compromise the vessel's security—whether without the knowledge of port personnel or the ship's crew, or in collaboration with them for criminal or terrorist purposes—constitutes a voyage-related security threat that originates from the port itself.

In order for safety and security measures to be implemented correctly, risks must first be identified. Risk (risque), which entered our language from French, is defined in TDK as "the danger of being harmed" in a narrow sense. Mierzwicky (2003) defined risk as "deviation of the outputs of the process from the averages or unexpected results"[50]. Blanchard (1998), on the other hand, defines risk as "the possibility of things going wrong due to one or more events"[51]. Although there are different definitions, risk can generally be considered as a deviation from the natural flow of life. This is because risk involves an unusual situation and uncertainty. Therefore, risks have different probability distributions.

One of the main duties of every manager is undoubtedly to keep his business safe and secure. The first condition to ensure this is to know the possible risks and to take precautions against these risks in advance. However, risks for businesses have a very wide definition. Safety and security risks also bring financial risks for businesses as a result. Therefore, risk has different levels of consequences such as injury, death, environmental pollution, cargo damage and losses and reputational losses of the enterprise in case of realisation of the risk.

In general, risks can be categorised into two main groups as speculative risks and accident (catastrophe) risks.[52] As a result of speculative risks, businesses may experience gains or losses. It is a speculative risk for the port to use a technology that has not been tried before. As a result, the port may gain financially or lose customers. The consequences of accident (disaster) risks in the second group will always be negative. A theft due to lack of security is among the accident risks. Similarly, a cargo damage occurring in the harbour due to insufficient lighting is also among the accident risks.

In its simplest form, for an accident to occur, there must be a fault, whether or not it is predefined. The error can sometimes occur outside the known existing possibilities and from the moment it occurs, it is now included in the definition of risk. Error can also be expressed as root cause with a more general definition. The root cause of an accident is the main reason that causes the accident to occur. Root causes are systematic or fundamental errors underlying the accident, unlike the events that appear on the surface. For example; the root cause of load damage caused by incomplete or incorrect crane maintenance can be any of the following:

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[50]Mierzwicki T. S., 2003. Risk Index for MultiObjective Design Optimization of Naval Ships, Faculty of Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
[51]Blanchard, B.S.;(1998), System Engineering Management, 3rd Edition, John Wiley & Sons, New York.
[52]Alberts A. J.; (2006), Common Elements of Risk, Acquisition Support Program, Technical Research sponsored by the U.S. Department of Defense, ss 4-13.

Human Error
•Lack of training: Maintenance personnel do not have sufficient technical knowledge.
•Carelessness: Failure to follow procedures exactly during maintenance.
•Lack of communication: Lack of co-ordination between the operator and the maintenance team.

Managerial and Organisational Factors
•Inadequate maintenance procedures: Failure to define maintenance processes in accordance with standards.
•Failure to keep maintenance records: Lack of accurate data on previous care.
•Cost-orientated approach: Incomplete or fast completion of the process while avoiding maintenance costs.
•Lack of supervision

Technical and Mechanical Factors
•Incorrect or incomplete maintenance: Failure to replace critical parts on time or incorrect installation.
•Use of poor quality spare parts: Use of unsuitable or low-quality components.
•Ignoring wear and tear: Failure to check parts in a timely manner.

Environmental Factors
•Working environment conditions: Factors such as extreme heat, cold or humidity reduce maintenance efficiency.
•Bad weather conditions: External factors such as wind or rain make maintenance difficult and threaten safety.

Since ports are considered a hazardous line of business, it is legally mandatory to establish Occupational Health and Safety (OHS) units in port facilities and to employ certified OHS experts. These measures are required in order to plan and implement the necessary actions to eliminate safety risks and to prevent the previously mentioned root causes before they occur. OHS experts are responsible for identifying and managing safety risks in our ports.

OHS specialists are responsible for preventing occupational accidents, occupational diseases, and other health and safety risks by taking and implementing technical, organisational, and individual measures aimed at ensuring worker safety as part of overall safety protocols. To minimise safety risks that may arise in ports, OHS specialists implement a wide range of comprehensive measures, as mandated by relevant laws and regulations. These include the use of personal protective equipment, installation of machine and equipment safeguards, fire prevention practices, conducting risk assessments, and preparing emergency response plans.

Ensuring security in ports is the responsibility of the port security organisation established in accordance with the ISPS Code and relevant legislation. The Port Facility Security Officer (PFSO), who leads this organisation, is responsible for preventing unauthorised access, protecting security areas, managing camera surveillance systems, operating access control systems (such as card access and biometric verification), installing and maintaining physical barriers (fences, walls, turnstiles, etc.), conducting patrol services, performing security screenings, and overseeing security training to ensure the protection of the port facility. In the port security organisation, private security personnel working under the coordination of the PFSO play a fundamental role. In addition, law enforcement officers, whose duties and authorities are defined by legislation, also contribute to port security:

• The Police and Gendarmerie are responsible for maintaining public order, responding to security incidents and judicial proceedings.

• The Maritime Police are authorised to combat illegal activities at sea, in particular smuggling, drug trafficking and human trafficking.

• Coast Guard Command provides support for maritime safety, maritime security and control activities of the port facility; however, it is not directly responsible for the internal security of the port facility.

• Customs Enforcement Units operate within the scope of preventing illegal trade and combating smuggling in bonded areas.

These institutions act in task sharing and cooperation within the framework of the Port Facility Security Plan (LTGP) coordinated by LTGS. Thus, a holistic, multi-stakeholder and risk-based security management system is established in ports.

4.2. Safe Harbours

Ports, which constitute the most important link in the logistics chain, play a strategic role for the storage, distribution and shipment of products from different sectors. As one of the most critical points of national and international trade, ports are at the centre of goods transport and logistics processes. A partial or total interruption of the service provided at a port brings economic losses not only to the port operation but also to the regional and national level, depending on the scale of the port. A complete interruption of port services can be caused by natural disasters (such as earthquakes, tsunamis, hurricanes, tornadoes, etc.), but can also be caused by large-scale fires, explosions or large-scale power outages in power lines. Safety-related risks are not only caused by natural disasters; sometimes they can also be caused by human errors, such as computer systems crashing due to software problems, or the ship becoming unbalanced due to improper loading.

A significant portion of the technical and operational problems experienced in ports are caused by inadequate infrastructure, superstructure and equipment. 5th Generation Ports, which emerged after 2000, are smart ports where digitalisation and full automation are at the forefront. However, a significant part of the world’s port infrastructures today consists of 3rd and 4th Generation Ports. With the 3rd Generation Ports (1980 - 2000), value-added services (such as customs clearance, packaging, assembly) have started to be provided in the port sector. In this way, the increase in connections with industrial and production regions has brought the value chain in ports to the forefront and the intensity in port activities has increased. Thus, the need for more digitalisation and

automation in port activities in 4th Generation Ports has arisen and smart port applications have started. A significant part of the safety risks other than natural disasters arise from the increase in the work intensity in ports, while the infrastructure, superstructure, equipment and technological features of the old generation ports are not suitable. In addition, new generation ports are more vulnerable to cyber-attacks. The biggest advantage of new generation ports is that they have a qualified workforce that can keep up with new technologies and have knowledge and skills in technological applications controlled by information systems. This is an instrument that facilitates the implementation of safety measures.

In a significant part of the ports, the inadequacy of the back area makes in-port cargo movements difficult. Inadequate planning of in-port cargo traffic creates vehicle density and makes accidents inevitable. The formation of blind spots between stacks, non-compliance with speed limits within the port, inadequate lighting or reduced visibility of drivers due to bad weather conditions can increase the risk of accidents and jeopardise the safety of port operations. Vehicle accidents can sometimes be avoided with simple cargo and vehicle damages such as hitting lighting poles or damaging cargo stacks, but sometimes result in dramatic incidents such as vehicles carrying cargo in the harbour falling into the sea. Not only vehicles carrying cargo in the harbour but also harbour equipment such as dropping cargo from Reach Steaker or shore cranes can cause accidents. Crane ropes breaking, crane boom breaking due to excessive strain or damage to the ship due to carelessness are among the safety risks that occur in ports.

Ports are also places where dangerous goods such as flammable, explosive, corrosive cargoes (IMDG) are handled and stored. Factors such as hazardous material handling errors, fire risk, inadequate occupational safety equipment and insufficient compliance of employees with safety procedures increase the safety risks in ports. Lack of emergency response plans, insufficient trained personnel and disruption of safety inspections are among the factors that may cause large-scale accidents in ports.

The concept of safety culture, which was defined for the first time with the Chernobyl accident, reflects the importance of the human factor in the prevention of accidents. In the report prepared by the Nuclear Energy Agency (NEA) of the Organisation for Economic Cooperation and Development (OECD) in 1987 as a result of the accident, the weakness of the safety culture of the institution was mentioned and this weakness was shown as one of the causes of the accident. The studies carried out for the prevention of occupational accidents mostly include technical studies and measures from an engineering point of view; the human factor related to the behaviour of employees is not taken into consideration.[53]

Safety Management is the whole of the activities that the port management and employees should show in order to prevent accidents or near accidents.[54]The first rule of a safe port is that a healthy functioning safety management is available in the port.

As of 2025, ports are defined as “Operation of ports and waterways in support of waterway transport (operation of ports, piers, docks, waterway pools, marine terminals, etc.) (excluding the operation of lighthouses, lighthouse pontoons, etc.)” in the “List of Workplace Hazard Classes” published by the Ministry of Labour and Social Security and included in the hazardous class. However, ports handling dangerous cargo (oil, petroleum products, chemicals, gas, etc. if there are storage and warehousing activities) are classified as very dangerous. Therefore, all safety measures and practices within the port are evaluated within this scope. While the dangerous and very dangerous class also determines the severity of the negativity that may occur, it also shows the risk probability of accidents that may occur. According to the Law No. 6331 on Occupational Safety and Health, an occupational accident is defined as an event that occurs in the workplace or due to the execution of the work, causing death or disabling the body integrity mentally or physically. There are 4 main factors in the main cause and prevention method of occupational accidents.[55]

[53]Aytaç, S. (2011). “The Importance of Safety Culture in Preventing Work Accidents” Türkmetal Journal, Vol: 147
[54]Zorba, Y. Kişi, H. (2009). “Safety Management of Dangerous Goods in International Maritime Trade and Application on Turkish Ports” DEU Maritime Journal, Volume: 1, Issue: 1.
[55]Chiba, T., Shinichi A.and Takeshi K., “Research on Method of Human Error Analysis Using 4M4E”, JR East Technical Review, 5, (2005).

Table 4.1 Causes of occupational accidents and prevention methods

Causes of Work Accidents	Basic Prevention Methods
Human	Training, awareness, motivation, behavioural safety
Environment - Environment	Engineering controls, layout, preparation for climatic conditions
Equipment - Machinery	Periodic maintenance, appropriate design, security systems, automation
Governance	Policies and procedures, effective supervision, leadership, organisational culture

The first condition of safe port operations is to determine the hazards and risks that may occur in port operations. Within the scope of this study, 13 different sources of operation-related hazards and 75 possible accident risks that may occur in ports have been identified (**Table 4.2**).

Table 4.2 Hazards and potential accidents in port operations

Hazard Sources	Risks and Possible Accidents
Vehicle Traffic in Harbour	•Accidents due to loading and unloading of the vehicle • Accidents due to operator errors • Accidents occurring during trailer coupling-separation • Accidents due to violations of vehicle and pedestrian common areas • Accidents due to vehicle manoeuvres • Accidents in the warehouse area • Accidents caused by driving outside the carriageway
Handling Operations	• Breakage or jamming of crane ropes • Any impact due to equipment movement • Reducing the load carried by port equipment • Accidents caused by equipment failure • Accidents caused by maintenance and repair of my equipment
Storage Operations	• Cargo shifting or falling (overturning of containers) • Accidents caused by incorrect stowage of cargo • Jamming (between load or equipment)
Falling and slipping from height	• Accidents at the gangway/ship boarding point • Falling during load lashing operations • Falling during repair and maintenance at height • Accidents due to vehicle transfer • Accidents occurring during embarkation with SSG or MHC • Falling of people or cargo into the sea due to carelessness or external factors
Dangerous Cargo	• Health problems due to exposure to hazardous loads • Secondary effects such as fire-explosion for fuels • Respiratory problems, fungus etc. problems in dusty loads • Ship wastes and gas leaks •Transport of flammable materials • Welding and cutting operations (at hazardous load sites)
Musculoskeletal Diseases	• Vibration • Non-orthopedic lifting movements (carrying heavy loads) • Repetitive movements (repetitive movements) • Storage and stacking activities • All kinds of rope accidents

Slips, falls due to stumbling and poisoning	• Falls due to oil or similar slippery debris or materials on the tier • Harmful and toxic gases • Oxygen-free environment • Flammable and explosive hazardous environment • Poisoning caused by inadequacy of fresh air breathing apparatus.
Leakage with entry and operation in enclosed spaces	• Harmful and toxic gases • Oxygen-free environment and insufficient ventilation • Flammable and explosive hazardous environment • Exposure to toxic asphyxiating corrosive substances
Electricity Accidents	• Electric shocks due to the use of inappropriate equipment • Electricity failures • Lack of earthing and insulation
Noise and Lighting	• Balance problems due to hearing • Hearing-related concentration problems • Accidents caused by inadequate lighting • Accidents caused by workers not hearing warnings in noisy environments.
Nature Conditions	• Concentration problems due to cold and damp weather • Health problems due to hot weather • Vision problems due to foggy weather • Loading-unloading problems due to tide • Storm and bad weather conditions • Sea waves and flooding
Ship-borne	• Tug manoeuvres • Breakage of mooring ropes • Vessel collision with dock or crane • Boarding and disembarkation accidents • Crushing during load movements on the ship • Falling into the sea through the gaps between the ship and the quay • Working in the ship hold • Fuel leakage or vapour explosions • Problems arising from ship wastes
Human Resources	• Accidents caused by the health status of the personnel (blood pressure, diabetes, etc.) • Failure to comply with rest periods or staff coming to work tired • Use of equipment for which he/she has no authorisation, competence or knowledge • Work intensity, work stress or pressure • Low motivation • Failure to comply with in-port work instructions • Failure to comply with in-port markings • Entering the manoeuvring areas of construction equipment • Frequent personnel changes • Long working hours and shift system • Failure to use personal protective equipment or the PPE used is not suitable for the work performed • Lack of training or lack of supervision

Adapted from Töz and Köseoğlu (2015)[56].

[56]Töz, A. C. and Köseoğlu, B., " Occupational Health and Safety in Maritime: A General Evaluation on Ports", II. National Port Congress, doi:10.18872/DEU.b.ULK.2015.0015, (2015).

Safety Risks of Ports Handling Dangerous Liquid Chemicals

Especially in ports handling dangerous liquid chemical cargoes, safety risks are much higher compared to ports handling other types of cargoes. The main risks encountered in such ports are serious scenarios such as cargo leakage, fire and explosion hazards due to static electricity that may occur during handling operation, gas entrapment, fires that may occur during cleaning of terminal and ship circuits. In addition, elevated oxygen level in tanks or inability to control in-tank atmospheric pressure are also important risk factors.

Failure to carry out an effective leaching operation to minimise cargo residues in the tank or hazards that may occur during tank cleaning, especially if safety procedures are not followed, can cause accidents that can lead to loss of life or serious environmental damage. Exposure of workers to the vapours of the cargo during the tank cleaning process may cause serious occupational health problems.

Risk Mitigation Measures and Training Needs

In order to minimise these risks, it is of great importance to act in accordance with the recommended tank cleaning methods and to pay attention to the properties of the materials to be used in the cleaning process. However, more importantly, all personnel who will take part in the operation should be thoroughly informed about the properties and potential risks of the liquid chemical being handled.

Prior to the operation, all procedures related to the cargo to be handled should be reviewed in detail; at the same time, regular information and drills should be carried out to the personnel regarding emergency plans. During the handling of flammable, combustible or explosive cargoes, no heat treatment (e.g. welding works) should be allowed on the dock or on the ship. In addition, metal objects such as hand tools and measuring devices that may create mechanical sparks should be removed from the environment due to the risk of falling.

Chemical Reaction Risks

The self-ignition temperature of some liquid chemicals can be quite low. Chemical reactions that may occur while handling such loads may cause an increase in pressure and temperature in the environment. These reactions may lead to the release of harmful or explosive vapours. Chemical reactions can be triggered not only by the characteristics of the cargo itself, but also by external factors such as increased oxygen in the environment (contact with air), pressure changes or contact with water.

Volatile and light monomer substances in the load may turn into heavier and viscous liquids or substances that solidify over time after the reaction starts. This may cause blockages in pipelines and pressure increase in the system.

Effects on Human Health

Inhalation, ingestion or skin contact with toxic chemical cargoes cause serious health risks. Many chemicals have corrosive or irritating effects on body tissues, and inhalation of their vapours or contact with eyes can directly threaten the health of workers. In some cases, these negative effects cause immediate results such as suffocation and burns, while in some cases they can cause diseases such as cancer that occur years later.

Stability Risk of Ships

Liquid bulk carriers have a more sensitive structure in terms of stability compared to other cargo ships. In these ships, stability may be adversely affected due to the free surface effect of liquid cargoes. Any instability that may occur in the harbour approach channel, harbour basin or during the handling process may create serious environmental risks.

Ports are facilities that provide uninterrupted service for 24 hours. Effective lighting is the most important safety measure, especially in ports handling dangerous cargo. The entire operation area, in-port access roads and all locations within the port area must be effectively illuminated and adequate lighting must be provided when natural lighting is insufficient or when workers are present. Different lighting levels may be appropriate in different areas. Higher levels of illumination may be required in particularly hazardous locations, e.g. boarding piers, shore ladders, steps and gaps in gangways, or where detailed operations are required. Lighting should be as uniform as possible. Sharp differences in lighting levels should be avoided. In addition, lighting means must not endanger the health or safety of the harbour worker , the safety of the ship, the cargo or navigation of other ships.[57]

In the handling of highly dangerous cargoes (PG I (Packing Group I) very highly toxic, corrosive or explosive substances), the ship should be docked at remote or special piers, and necessary precautions should be taken in the pier area and on the transfer routes during handling. Similarly, special precautions are required in storage areas. The storage recommendations in the course training manual on handling, transport and storage of dangerous goods (2012) are summarised below.

- The selected site should be located as far as possible from other working areas and residential areas. This area will not be at risk of flooding and should be personally protected against flooding by dams or rock embankments.
- The distance between the berth and the collection area shall be the shortest possible.
- For customer vehicles, the shortest route within the harbour and, if possible, one-way traffic will be provided.
- Storage and stacking areas will have easy access for emergency services. A permanent access for emergency services will be provided.
- The site should be in a position to ensure adequate water supply for fire extinguishing or other extinguishing means if necessary.
- The private site must have excellent connections to all vital facilities of the port.
- Distinction should be made between open, semi-open stacks or collection points.
- All sites where dangerous cargoes are stored or stowed shall be fully fenced or stockpiled; roads shall be paved with asphalt or stone and shall have adequate and well-maintained lighting. The wire mesh or picket fence shall not prevent access in case of emergency or interfere with manoeuvres.
- The places where dangerous cargoes are stowed shall have a solid tier and shall be fully equipped with warning signs related to the risk carried by the cargoes. These warning signs must have plates to identify the risk class of the IMDG Code.
- Places where dangerous cargoes are collected must have a solid tier, fire-resistant walls, metal doors, a light ceiling and a closed drainage system and ventilation system and warning signs and have fire extinguishing facilities suitable for the stacked loads.
- All construction materials used for collection places shall be made of non-combustible, non-flammable materials.
- Special places must be provided for the stowage of damaged dangerous cargoes. They must be personally marked with signs and must comply with all mandatory rules for stowage of non-damaged dangerous cargoes.
- All places where dangerous cargoes are stowed must be equipped with fixed and mobile fire detectors and fire fighting equipment as well as smoke and heat absorbing equipment.
- Sufficient operational and emergency protective equipment must be available.

[57]ILO Safety and Health in Dockwork: 1997:6,7

• All personnel must be adequately trained.
• The port area should have operational and Emergency procedures approved by the competent authority.
• The port itself should have an approved, tested and frequently exercised emergency plan

In storage and stowage areas where containers containing explosives are segregated, containers carrying explosives and mobile water tanks should not be stacked on top of each other. It will also be appropriate to stack these containers with easy access to the doors and both cargo sides.[58]

In the container storage area, each of the non-double allocation rows is used for storing a container carrying dangerous goods, with containers carrying general cargoes placed between them. These rows are marked with black triangles. Containers are always placed with their doors facing the escape route and are never stacked on top of each other.[59]

Areas where loading and unloading operations and container maintenance and repair work are to be carried out must be clearly designated with appropriate signage and specially reserved for such work.

Containers containing dangerous cargoes should be cleaned in locations other than those where dangerous goods are stored. These locations must be adequately equipped to prevent contaminated wash water from coming into contact with watercourses, sewers and storm sewer drains.

After unloading the container carrying dangerous cargoes, all plates and goods risk identification must be removed from the container. During loading, all plates and markings prescribed by the IMDG Code must be attached according to the dangerous cargoes transported.

Dangerous cargoes class 1 (explosive substances such as dynamite, gunpowder, etc.) not belonging to Section 1.4 S) must comply with the "mandatory dispatch conditions", i.e. the last-in, first-out rule must be applied. The storage of these substances should not be permitted in port areas. If, for unforeseen reasons and with the permission of the port authorities, it is necessary for them to remain in the port area, the terminal should have special places suitable for holding them during this period. These places should

[58]İnanır M. (2012) "Safety Management Practices in Handling Class 1 Type Dangerous Goods in Ports" DEU. Institute of Social Sciences. Master Thesis
[59]Handling, transport and storage of dangerous goods course training manual, 2012:78

•It is surrounded on three sides by double-drawn steel piles filled with sand,

•On the fourth side there is a steel door with a double throw lock,

•Either it has no ceiling at all or the ceiling is made of light plywood,

•Accessibility to means of transport,

•Having a water spray system against fire,

•The presence of a reservoir capable of collecting dirty water underneath

required.

A container, office or a suitable structure should be located close to the storage area. This structure should be suitable for personnel to be on duty 24 hours a day for the duration of the cargo storage and should be equipped with the necessary communication facilities. Likewise, in order to prevent the presence of unauthorised persons in the area, the area should be surrounded by a fence and supported by systems that can provide communication when necessary.

A significant part of our country's ports are located in the first degree earthquake zone, which is among the natural disasters. The management of dangerous goods is of particular importance in the face of the risk of natural disasters that ports may be exposed to. In our country, which is constantly faced with the risk of earthquakes due to its geographical location in the centre of active fault lines, a catastrophic earthquake occurs every five years on average, causing large-scale loss of life and property. In the last hundred-year period, Türkiye ranks fourth in the world in terms of major earthquakes. Türkiye is located in a geography of the world that can be characterised as "high risk" in terms of earthquakes.[60] Generally, the measures taken against earthquakes (such as seismic resistant building design, emergency evacuation plans, equipment stabilisation) are aimed at preventing accidents and damages. The main damages caused by earthquakes in ports are infrastructure, superstructure and equipment damages, fire, explosion and cargo damages. A significant part of the operations of ports consists of open area activities. Therefore, injury and death cases during and after an earthquake are limited. However, in the event of an earthquake at a scale that will affect the port, loss of labour force from port employees is inevitable due to regional losses.

A significant portion of accidents occurring in ports are caused by human error. Therefore, many of the safety measures and rules to be followed are designed to minimise such errors. The obligation to comply with safety and occupational health rules primarily serves to protect individuals and their colleagues. In this context, all personnel in the port area—including port workers, subcontractors, public officials (e.g., customs, police), agency staff, suppliers, visitors, and any other individuals who may be present for any duration—must wear personal protective equipment such as hard hats, high-visibility vests, and safety shoes. No unauthorised person may be present in operational areas, on board vessels, or near operating machinery. Port personnel may only use designated pedestrian routes. Under no circumstances may anyone enter an operational area while handling operations are ongoing. All land vehicles operating in or entering the port for cargo delivery or pickup may only move in designated areas, in a controlled manner, and in compliance with authorised speed limits. Vehicles transporting cargo must not operate without proper lashing appropriate to the nature of the cargo. All vehicles and machinery must be parked in designated areas. Operators and other personnel may only board or disembark vehicles in designated zones. Except for the mooring team, no employee may be near ship ropes or at their bollard attachment points on the quay. All railway crossings by personnel or vehicles must be conducted in a controlled manner. Personnel and visitors must not be present in any area where they are not authorised to perform duties. Each individual is primarily responsible for their own safety and must comply with all workplace-defined safety and occupational health rules. Ports are responsible for informing and training all personnel regarding occupational health and safety and ensuring full compliance with these rules.

[60] AFAD (2017) "Disaster Management in Türkiye and Natural Disaster Statistics", 68 pp.

SPECIAL FILE 1: SHIP STABILITY HAZARDS AND PRECAUTIONS TO BE TAKEN

The Turkish Port Operators Association is a non-governmental organisation dedicated to sharing both positive and negative experiences in port management and operations, thereby enhancing knowledge exchange among ports. Within the association, specialised working groups for each cargo type (e.g., container, ro-ro, passenger) hold regular meetings to discuss current issues and generate knowledge that supports the development of port operations in the public interest. In addition, the association establishes special working groups in response to emerging issues, aiming to support the development of the port sector in specialised areas through the involvement of experienced port professionals. In this context, a sub-working group was established to address ship stability-related risks that may arise within the port area. Experts from member ports of the Turkish Port Operators Association participated in the group. The working group's findings will be published as a standalone report. The key results and recommendations are briefly summarised below.

A ship accident—such as sinking, capsizing, or grounding—that occurs in the harbour approach channel, basin, port area, or berthing zone may significantly disrupt port operations or render the port temporarily inoperable. Generally, adverse weather conditions, technical failures on board, collisions or allisions, fires, explosions, or a loss of vessel stability during cargo handling operations can lead to serious maritime incidents.

Ensuring safe and safe berthing for vessels is among the core functions of ports. Natural harbours located in sheltered bays and breakwater-protected ports are typically able to provide uninterrupted service during adverse sea and weather conditions. However, ports exposed to open-sea conditions—especially those designed as pier-type terminals—may be affected by such conditions at certain times of the year. Abnormal weather and sea conditions pose an increased risk of sinking, particularly for non-compliant vessels. Nonetheless, the probability of a vessel sinking within the port area due to environmental conditions is generally assessed as a low-risk scenario.

Marine incidents during approach manoeuvres—such as rudder jamming, main engine failure, strong crosswinds, or navigational error—can result in allision with the quay, another vessel, or shore-based equipment such as quay cranes. These events often lead to structural damage and operational disruptions, causing significant financial losses.
Risks arising in hazardous cargo handling operations, especially in the loading and unloading of liquid chemical tankers and container ships, can lead to much greater disasters than the sinking or damage of the ship. This issue has been analysed in detail in Chapter 4.2 of the Report. In this section, ship stability problems in handling operations, which are more likely to occur than other risks, are analysed.

Although there are many reasons for the instability of ship stability during handling operations, there is a connection between ship size and fault tolerance. As the ship size decreases, the errors made have a higher impact on ship stability. To make a general classification, ships between 170 m - 150 m can be considered as "requiring supervision", ships between 149 m - 130 m as critical and ships below 130 m as very critical. This classification varies from port to port according to the physical characteristics (length, draft, etc.) of the berth (jetty) where the ship receives service, the nature of the loaded cargo (container, project cargo, etc.) and the handling equipment (SSG, MHC, etc.).

There are three basic equilibrium conditions for all ship sizes and types, regardless of size:

1. Stable Equilibrium
A ship is in stable equilibrium when the Centre of Gravity (G) is below the Metacenter (equilibrium point) (M). When the ship is tilted to a certain angle (theta Ɛ), the Buoyancy Centre (B) is displaced. This displacement creates a Straightening Arm (GZ) and thus a Straightening Moment which brings the ship back to its upright position. The ship returns to a stable equilibrium position. In a stormy weather, the roll of the ship with wave effect is realised within the framework of this mechanism.

The distance from the centre of gravity (G) to the balance point (M) (metacentric height) is the critical measure of ship stability. The greater the metacentric height of a ship, the better the stability of the ship.

2. Neutral Equilibrium
When the Centre of Gravity (G) of a ship and the "Metacentre (balance point)" (M) of the metacenter are in the same position (point G coincides with M), the ship enters neutral equilibrium. This situation is dangerous because there is no straightening arm (GZ) to bring the ship back to the stable position and there is no straightening moment to bring the ship to its upright position. The ship remains in a position known as Angle of Loll . This position of the ship lying on its side is a critical point in terms of capsizing. The smallest force coming from the side where the ship is lying will cause the ship to sink completely on its side. In this case, the ballast tank on the high side (the side above the water level) should be filled with water and the G point should be reduced below M, the ship should be brought upright and the balance should be restored.

3. Unstable Equilibrium
If the Centre of Gravity (G) of a ship rises above the equilibrium point (M), the ship has lost its stability. The ship becomes unstable and negative GM occurs. In this case, the straightening arm (GZ) also becomes negative and the straightening moment acts in the opposite direction and increases the bending angle and the ship continues to heel. At this stage, if the ship does not reach a stable equilibrium before taking water, the ship will capsize.

1966 International Load Limit Convention (LLC) & SOLAS requires ships to have an approved stability booklet. Within the scope of the International Ship's Integrity Stability Code (IS Code) 2008, in order to reduce the risk of Parametric Rolling which may jeopardise the stability of the ship, the minimum verification arm (GZ) of the ships, the required GM value and the response of the ship to lateral roll caused by waves and wind are defined. The main purpose of the measures taken within the scope of all regulations and rules is to maintain the positive GM value of the ship and prevent capsizing.

Within the scope of TÜRKLİM Sector Report, ships of 150 m and below were taken into consideration while assessing ship stability risks. For vessels under 150 m, operation and working procedures were analysed under three headings (operation start-up process, operation process and post-operation).

1- Before Operation
- The operation cannot be started until the loading plan is approved by e-mail.
- Before the ship docks, Cargo Securing Manual, P&I Certificate and Crew List are requested and controls are provided.
- Deadweight / Reserve Deadweight Control (Ballast and Cargo tonnages) is performed.
- Comparison of the total tonnage of the containers on the ship in the system in the Arrival and Departure Stability report (If there is a difference, container-based control of the details on the list).
- Sea water density in the harbour area is controlled.
- Information is received from the master regarding the stability status of the ship (Deadweight, Reserve Deadweight, GM Control, Mean Draft/Max Draft).
- For all ships under 150 metres and with cranes, following the permission for departure of the ship, the Ship Planner together with the Ship Operation Shift Supervisor and the Ship Planner board the ship and the Officer of the Deck is made to sign the Operation Commencement Agreement

Form and important notes are recorded (Annex). After starting the operation, it is constantly checked that the operation continues as agreed.

- Following the signature of the Operation Commencement Memorandum Form, the wet signed and stamped approval of the ship is obtained for the Loading General Plan and Loading Tonnage General Plan documents.
- During the ship planning process, tonnage controls are carried out, and if the line or captain plans full containers on empty containers, they are notified that this is not appropriate.
- Before starting the operation, the general cargo layout of the ship is checked and tonnage controls (full container on empty container, heavy tonnage on light tonnage on hold, load distribution) are carried out on the arrival plan.
- When the ship docks, the holds to be discharged are checked by the foreman. On deck; if there is inappropriate use of twistlock between containers (use of in-hatch lock instead of semi-automatic lock, no lock at all...etc.), the ship is informed.
- When the ship arrival plan is uploaded to the system, Shift-Lead and/or Vessel Planner checks the tonnage in the holds to be discharged. If empty containers on the lower tiers and full containers on the upper tiers are detected on the deck of the warehouses to be discharged, the Ship Master is warned.
- During the Ship Planning process, if full container planning is made on empty containers by the Line and/or Captain, the Line and/or Captain is notified by e-mail that such planning is not acceptable as a port.
- As a result of the examination of the arrival stability reports, it is decided to carry out the discharge operation on the hold as a single mail; however, the number of mails is determined by taking the departure stability report into consideration.

2- Operation

- In over hatch discharges, tier twistlock locks cannot be opened with unlashing,
- Twistlock locks on the hatch covers are opened in accordance with the evacuation process.
- In case there are containers with a tonnage of 20 tonnes or more on the 3rd tier and above, firstly the evacuations on the 3rd tier and above are continued in accordance with the starting warehouses specified in the memorandum form and the twistlock locks are opened as the evacuation of the tiers is completed,
- When the evacuation of the 1st tier above the warehouse is reached, the crane is put on standby and the operation is continued by opening all tier locks,
- At the beginning of the operation, the deck is progressed in such a way that there is a row sweep (tier) evacuation from the upper tiers. Evacuation in vertical rows is avoided.
- If there are 2 or more posts, measures are taken and monitored to prevent the cranes from performing twin operations on the same side at the same time.
- If there is a ship crane and these cranes have to be turned to the seaward side, the direction of evacuation sweeping is proceeded from the seaward side to the land side for the top 2 tiers. If there is a choice, the bays with heavy tonnage containers on the deck are preferred.
- MHC cranes are used whenever possible (for vessels smaller than 130 m). In case of working with STS cranes, twin container loading operations are carried out carefully.
- When the ship docks, the lashing of all holds to be discharged is not opened. Firstly, the warehouse where the crane will work is opened. When the crane will pass to the next hold, the unlashing of the next hold is opened. In loading, lashing is done in the opposite way as the holds are finished. All lashing is not kept waiting to be done at the ship's final.
- Loading on the warehouse is not carried out before the unloading and loading in the warehouse is completed,
- If only loading is to be done in the ship operation, the inside of the hold is finished first.
- If there is a chance to manage, deck 1st and 2nd tier loadings are finished and lashings are tied. Then proceed to the upper tiers.
- During the operation, in case of plan changes that have to be made by the ship or due to the operation, the operation is stopped and a stamped confirmation with mail and wet signature is obtained from the ship and the operation cannot be started again without approval,
- During the operation, the operation is stopped and the relevant supervisors are notified as soon

as any kind of negativities (ship leaning to port/starboard side, excessive trimming of the bow/stern, disruption of the ship's balance during handling) are detected by the personnel in charge of the ship operation.

- After the ship operation is stopped, the situations that adversely affect the ship operation are discussed with the ship captain, stability values are reviewed and reconciliation is made according to the ship's action plan. If the negative factors continue, the Port Authority is informed about the issue and the operation is not continued.
- During the operation, in case of any problem related to the ballast operation of the ship notified to the Ship Operation Shift Supervisor by the ship, the operation is stopped and the relevant supervisors are notified,
- During the operation, e-mails received by the ship or the agency regarding the operation of the ship are returned in writing,
- Lashing / unlashing operations are carried out in a controlled manner during discharge and loading processes. All lashing is done before the ship operation is completed.
- **What to do in case of list (listing) of the ship:**
- The reason for the situation is determined by contacting the ship captain.
- The ballast operation of the ship is examined and co-ordination is ensured with the master for correction.
- The operation is immediately stopped and the relevant port authorities are notified.
- The operation shall not continue until the approval of the captain and harbour authorities that the ship is stabilised.
- During the operation process, the requests submitted by the ship or agency are responded in writing.

3- After Operation

- After the operation is completed, a Statement of Facts (SOF) is signed before the vessel is authorised to depart.
- Loading General Plan and General Plan with Loading Tonnage documents are approved by the ship with wet signature and stamp.
- Ship operation is completed by obtaining approval for the departure file.
- These procedures are applied to ensure safety and efficiency in port operations. All operation teams are obliged to comply with the specified rules.

Container ships and cargo ships carrying containers on deck face five major stability hazards. These hazards and recommended preventive measures are described below.

Hazard 1: Misdeclared Container and Cargo Weight

Some cargo owners may knowingly misrepresent the cargo weight in order to avoid full payment of the freight charge or without knowing the effect on the stability of the carrying vessel. This danger is mitigated by **SOLAS Chapter VI, Rule 2, paragraph 6** (entered into force in 2016) **and IMO MSC.1/Circ.1475 Guidelines on Verified Gross Weight (VGM) for Container Cargoes**. These rules require the cargo owner to sign and present the "Verified Gross Weight (VGM)" document to the master before loading on a **SOLAS covered** ship of **more than 500 GT and operating in international trade.**

However, this danger has not completely disappeared. This is because it has been reported that "**SOLAS rules and IMO Guidelines are unevenly applied globally by flag and port States**". Moreover, **these regulations are often not applicable to cargo owners and vessels operating in cabotage.** As a result, misdeclared container weights continue to pose a serious risk to domestic trade in both international and cabotage transport.

Measure 1: Awareness of the danger of container weight misdeclaration is the primary line of defence for ship masters and shore-based cargo planners. Stevedores should immediately notify the master if, during loading, they notice containers whose weight is significantly higher than the declared values. Such containers should be re-weighed at the terminal and should not be accepted unless within a reasonable tolerance of the declared weight.

Hazard 2: Free Surface Effect (FSE)

It occurs when fuel and ballast tanks are left partially full or "hollow" rather than full (at least 98%). The free surface effect causes the ship's **centre of gravity (CoG) to rise** and if this effect is not taken into account, it can cause the ship to become unstable.

Precaution 2: High awareness of FSE and **close co-operation between master and chief engineer** are essential. Especially **on fully loaded container ships, since the metacenter height (GM) and residual stability are usually limited**, the free surface effect should be kept to a minimum and should never be ignored.

Hazard 3: Sudden rise of the ship's centre of gravity
Lifting a heavy container by the ship's crane **causes this weight to be transferred suddenly to the top of the crane and thus the ship's centre of gravity (CoG) to rise rapidly**. If this happens in the final stages of the loading process when the stability of the ship is low, the ship **may list heavily or even capsize.**

Precaution: Stability calculations should be made at all stages of loading and unloading operations. Not only the stability of the ship during the final sea voyage but also stability during loading operations should be considered.

Hazard 4: Synchronised (Resonant) Rolling

As described in IMO's **MSC.1/Circ.1228 "Updated Guidance for Masters on Avoiding Dangerous Situations**", it occurs when the roll period of the ship is at the same frequency as the period of ocean waves. This is particularly dangerous **in heavy weather and large wave conditions when the ship's main engines stop and the ship begins to drift.**

In this case, the ship is brought into a beam-on position by the wind and waves, and over time the roll motion may increase and turn into a severe listing. Such an incident occurred on board the **APL ENGLAND** and **caused the loss of 40 containers**, although it was only immobilised for a short time due to main engine failure.

Measure 4:
- Taking ballast water to lower the ship's **centre of gravity and increase the metacenter height (GM).**
- **Changing** the **wave period and disturbing the resonance by changing** the ship's course.
- **To prevent synchronisation by increasing or decreasing** ship speed.

Hazard 5: Parametric Rolling

This issue, which is explained in the same guideline of IMO, occurs especially i**n Post Panamax type container ships with large bow and stern projections.** As a result of the ship experiencing sharp bow and stern movements (pitching) in the waves coming from the bow of the ship, **the ship and wave interactions cause excessive rolls.** Rolling angles up to 45° have been experienced and loss of 400 containers has been reported in some incidents.

Measure 5:
- Owners or operators of Post Panamax type ships **should provide information to masters and managers in accordance with IMO's updated guidance.**
- Ship stability manuals **should be prepared according to the alternative criteria of the 2008 ISM Code.**

4.3. Safe Harbours

Security is as important for all institutions and organisations as their core business. Facilities related to transport and energy infrastructure (ports, airports, dams, thermal power plants, etc.) are critical facilities both in terms of the economy they create and the direct population of the country. Therefore, security is of higher importance than in many other sectors. When security risks are evaluated on sectoral basis, transport and energy sectors are the direct targets of threats such as terrorism and sabotage.

Due to the high security risks of ports, the security of the port is not only limited to the authorised persons related to security. Because a security threat targeting the port may also harm the employees. For this reason, the implementation of security policies covering all port employees can only be possible with the establishment of a security culture in the port. The development of a security culture in a port is possible with security management covering all threats in business processes. As a result of the development of security culture, the selectivity of port employees in perception of security risks will increase.

In terms of security, the risks and the probability of occurrence of risks in the logistics chain, including ports, may change over time. Therefore, the hazards and risks within the port should be continuously assessed and the process should be constantly revised. The aim of general security management is to take the necessary precautions and eliminate the dangers (**Figure 4.1**).

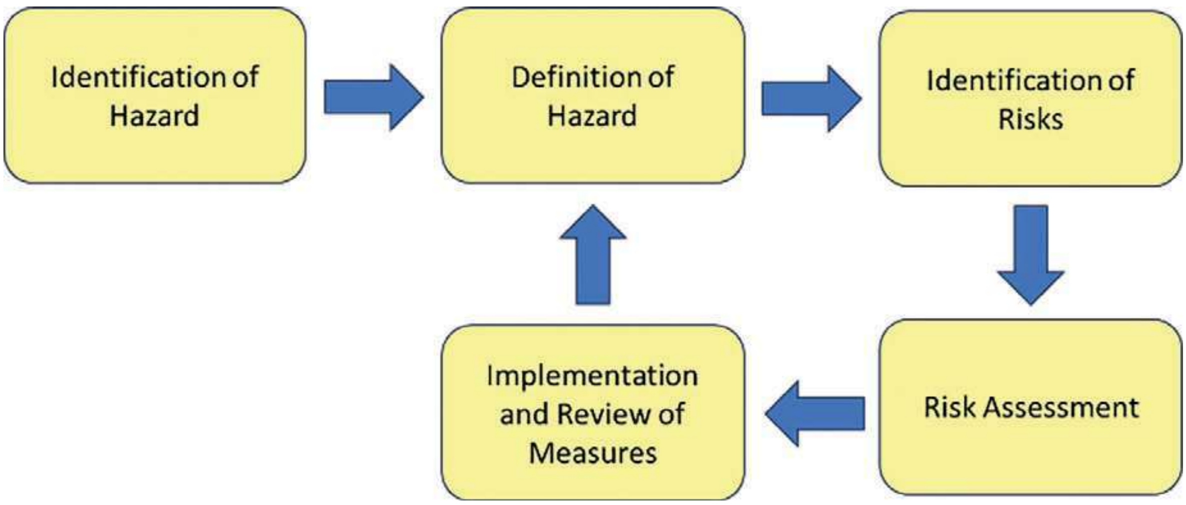

Figure 4.1 General security management[61]

Security under threat consists of three stages. The first is the detection of threats that may pose a danger to the harbour. For example, detecting an infiltration attempt into the port area constitutes the first stage. The second stage is identification. It identifies what the infiltration attempt is (human, drone, vehicle, etc.). The last stage is defence. Stopping the person or vehicle attempting to infiltrate is the last stage of defence.

The determination and implementation of security policies and procedures in ports are carried out by the Port Facility Security Officer "PFSO". The Port Facility Security Officer is responsible for the development, implementation, audit and updating of the "Port Facility Security Plan" by taking into account the general and specific hazard risks of the port. At the same time, the Port Facility Safety Officer works in coordination with the Ship Safety Officer of the ships calling at the port.

Each port is obliged to make "Port Facility Security Assessment (LTGD)" for the determination of

[61]Wang, J. (1998). A review of design for safety methodology for large marine and offshore engineering systems. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 212(4), 251-261

all kinds of security action risks that may arise internally and externally for the Port Facility and for the determination of the solutions by evaluating these risks.

Today, a significant portion of the harbours are located within the residential areas. While this situation makes ports an easy target in terms of security risks, it also includes the urban population in the risk group in case of major dangerous events such as chemical attacks. Ports are facilities where dangerous cargoes are handled and stored. In addition, chemical tankers, oil tankers, LNG, LPG ships receiving service from the port are vulnerable to the danger of being a target.

The following factors should be taken into account when assessing ports in terms of security risks:
-Use of hazardous chemicals through fire, explosion or leakage of toxic gases,
-Theft of hazardous chemicals,
-Major damage to important infrastructure in the port area by hazardous chemicals,
-Theft of confidential information on dangerous cargoes,
-Interaction of products with each other,
-Bomb threat,
-Prevention of safety and security measures,
-Sabotage against port employees, etc.[62]

The main security risks faced by the port sector are briefly summarised below.

Terrorism and Sabotage Threat

The word terrorism corresponds to the word intimidation in the Dictionary of the Turkish Language Association and is defined as "Acting in such a way as to instil fear in the other side, to kill life and property in order to force the acceptance of a political cause. The aim of terrorism may be to damage the country's economy, to create an atmosphere of social chaos or to attract the attention of media organs. The places where malicious individuals or groups will realise all these objectives are undoubtedly strategically important facilities.

Ports are targets of terrorist attacks due to their fields of activity and their position in the national economy. There is a risk of attacks on ports with explosives or chemical substances in order to damage the national economy or create chaos. An attack on the port from land or sea may cause significant casualties to port employees and facilities. Against such an attack, ports are protected by the security forces of the state both physically and with high-level security technologies.

Another security risk faced by ports is sabotage. Ports are protected 24 hours a day against the threat of sabotage, which may be organised to damage ships and port facilities, targeting the port or ships receiving services in the port from land or sea.

In the protection plan against sabotage, measures should be taken by determining the places that are suitable for sabotage in terms of preparation, measures to prevent unrelated persons from entering these places, how often and in what way entry-exit controls are carried out, what kind of measures are taken against unauthorised or unauthorised persons entering/exiting the restricted areas, and measures should be put forward by examining the issues of being effective remotely from neighbouring facilities and buildings to the protected area. In addition, the technical measures taken, the adequacy of the technical and protection team, the measures taken against explosive-explosive-flammable substances, the measures taken against nuclear-biological-chemical attacks should be specified.

In terms of protection, the adequacy and number of the protection team, the security surveys of the protection team, the location and function of security points, entry points and entry-exit controls, measures taken in terms of physical and electronic security systems, the status of environmental lighting and the status of warning-alarm systems should be specified. In addition, within the

[62] BajBai, S., Gupta, J.P. (2005). Site Security for Chemical Process Industries, Journal of Loss Prevention in the Process Industries 18: 301-309

framework of all measures taken, the adequacy of the measures taken against the possibility of sabotage or unannounced sabotage should be examined.[63]

In ports, flammable, explosive or chemical substances are stored in designated areas in accordance with special safety standards. There are special fire extinguishing systems, ventilation systems and emergency evacuation procedures for dangerous goods against a possible attack. In addition, ports are prepared for a possible security risk through training and drills. International Ship and Port Facility Security Code (ISPS Code): This code, adopted by IMO, aims to increase ship and port security.

Port Facility Security Plans should include at least the following aspects, taking into account the recommendations in Part B of the ISPS Code (IMO, 2012:130):

- Measures taken to prevent the entry of weapons or other dangerous substances and vehicles intended for use against persons, ships or port facilities, as well as cargoes that are not permitted to enter the ship or port facility,
- Measures to prevent unauthorised access to the port facility, the ship in the port facility and the restricted areas in the port facility,
- Methods of responding to security breaches or security threats, including the conditions under which important activities at the port facility or at the ship-port interface can continue,
- Methods of responding to the security instructions set by the State Party for security level 3,
- Methods of evacuation of the port facility in case of security breach or security threat,
- The duties of the port facility personnel responsible for security and other personnel determined in terms of security,
- Methods of interfacing with ship security activities,
- Methods of periodic renewal and updating of the plan,
- Methods of reporting security incidents,
- Identification of the port facility security officer, including contact information that can be reached 24 hours a day,
- Measures taken to ensure the security of the information contained in the plan,
- Measures taken to ensure effective security of cargo and handling equipment in the port facility,
- Methods of inspection of the port facility security plan,
- What to do in case of activation of the alarm system of a ship in the port facility,
- The actions to be taken to facilitate the disembarkation of the ship's personnel or the change of personnel, as well as the entry of visitors to the ship.

Smuggling and Illicit Trade

Smuggling is the transport and trade of goods, services or people in violation of state-imposed rules on customs, taxes, trade or the illegal movement of goods and services. Smuggling is a type of offence that has serious financial, economic and security consequences. It often leads to tax losses for the state, an increase in illegal trade and the strengthening of organised crime.

Being at the nodes of land and sea routes, ports are at the centre of the international trade network. Large-scale cargo movement through ports by sea provides a favourable environment for smuggling and illegal trade. Ports open to international trade are subject to customs legislation. The General Directorate of Customs Enforcement of the Ministry of Trade, the General Directorate of Security - Anti-Smuggling and Organised Crime Department, the Ministry of Trade - Anti-Smuggling Department, Coast Guard Command, Gendarmerie General Command, the Ministry of Agriculture and Forestry - Veterinary Border Checkpoints effectively combat smuggling.

Protection and security plans are prepared in order to minimise the security risks in ports and to intervene in the most appropriate way in case of a negative situation. Protection and security plans are prepared by the enterprises that have a private security permit certificate obtained from the provincial governorate where the port facility is located within the scope of the Private Security Law and approved by the provincial security directorate private security branch directorate.

[63]Tohumcu, Ö.K. and Kazan H., (2019). "Integration of Port Facility Security Plan with Other Security Plans Prepared in Ports within the Framework of the International Ship and Port Facility Security Code (ISPS Code)", Journal of Land War College Science, June 2019, 29 (1), 17-64.

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Protection and Security Plans;

- Article 12 of the Private Security Law and
- Article 22 of the Unified Circular on Private Security Services
- Circular dated 19/04/2005 and numbered 2005/42 by the Ministry of Interior, General Directorate of Security
- "Regulation on Ensuring Security and Execution of Duties and Services at Civil Airports, Ports and Border Gates" which entered into force after being published in the Official Gazette dated 14/8/1997 and numbered 23080

are prepared in accordance with the provisions. The protection and security plans prepared within the framework of all these issues are implemented by the private security personnel in the port facility and security measures are maintained.[64]

There are different types of smuggling that pose a security risk in ports.

- **Smuggling of Goods:** The illegal import or export of prohibited or untaxed goods (electronics, high-value machine parts, medical supplies, etc.).

- **Drug trafficking:** Ports are frequently used points for international drug trafficking.

- **Arms smuggling:** Illegal weapons can pass through ports via containers or ships.

- **Fuel Smuggling:** The sale of untaxed or illegally imported fuel oil.

- **Human trafficking:** Smuggling of migrants and trafficking in human beings are crimes that can be carried out through ports. Stowaway passengers who board the ship without the knowledge of the ship owner or other relevant ship and port personnel cause significant problems for the ship at the port of destination.

- **Smuggling of historical artefacts:** The illegal sale or removal of cultural assets out of the country.

- **Animal Smuggling:** There are types such as exotic and domestic animal smuggling, endangered animal smuggling, seafood smuggling, animal skin and organs smuggling.

- **Alcohol and Cigarette Smuggling:** Smuggling of tobacco and alcoholic beverages into the country illegally or with false customs declaration in order to evade taxes or to place illegal products on the market

Theft and Illegal Attempts

Theft incidents occurring in port facilities refer to the theft of some or all of the cargo during the loading or unloading of the cargo to or from the ship, during storage and transfer of the cargo within the port facility.[65]

- **Cargo theft:** The theft of some or all of the cargo from port facilities (open closed warehouses, warehouses, etc.) causes significant problems for port management and port security units both against the owner of the goods and against customs units.

- **Equipment theft:** Port vehicles, cranes and other machinery can be stolen or damaged. Similarly, vehicle sections can be stolen in Ro-Ro ports.

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[64] Tohumcu, Ö.K. and Kazan H., (2019). "Integration of Port Facility Security Plan with Other Security Plans Prepared in Ports within the Framework of the International Ship and Port Facility Security Code (ISPS Code)", Journal of Land War College Science, June 2019, 29 (1), 17-64.
[65] Nurduhan M. (2017). "Measurement of Security Performance of Port Facilities with Fuzzy Logic Method: A Port Application" DEU. Institute of Social Sciences. Master Thesis

- **Unauthorised entry:** If people enter the port illegally and damage the cargo by using security gaps, the commercial value of the cargo decreases.

Although ports have insurance against cargo damages and losses, a lost container will bring along an important customer insecurity for the port in the service sector.

Cyber Security Threats

Until 2012, the International Ship and Port Facility Security Code ISPS generally prioritised measures against physical threats (terrorism, piracy, illegal entry, etc.). However, the development of information technologies and digitalisation in new generation ports have opened a new path for terrorists who want to harm ports. The increase in cyber attacks on important facilities has revealed the need to take more security measures against Cyber Security and Electronic Threats.

Cyber attack refers to all attacks made in order to damage an organisation in the digital environment, to prevent its activities or to provide unauthorised access. Cyber security is the tools, policies and practices used to protect information systems from attacks. The protection of all computer-aided activities, programmes, data and communication networks used in ports falls within the scope of cyber security. In new generation digital ports, the usage areas of information systems have expanded and started to manage and control almost all port operations. In addition, information systems in managerial and commercial dimension have started to cover all port-wide activities. Malicious software (Malware) targeting the port operating system and stopping its operations has spread to a wide range.

Security risks in ports arise not only from physical threats but also from cyber attacks and illegal activities. Therefore, both physical and digital security measures should be taken to ensure a safe working environment.

Unauthorised Ship and Cargo Movements

Another important risk that may jeopardise port security is the use of forged documents. Carriage of cargoes with forged documents or transport of unregistered goods may both disrupt port operations and pave the way for illegal activities. For this reason, the documents of all cargoes should be carefully examined and any forgery should be detected and legal action should be initiated. Advanced document verification systems and customs inspections play an important role in preventing cargo transported with forged documents.

Another threat is the creation of secret compartments on board ships. The creation of special compartments or secret areas on board ships for the storage of illegal materials poses a serious risk to security. Such secret compartments can be used to conceal smuggling activities. Port security teams try to prevent illegal activities by using advanced scanning and inspection methods to detect such hidden compartments in ships.

Employee or Visitor Security

Port security requires a strong defence not only against external threats but also against internal threats. Internal threats can manifest themselves in the involvement of port employees or visitors in illegal activities. Such situations both jeopardise the security of the port and disrupt the order of operations. Regular audits and training should be implemented to detect such insider threats.

Violence can also occur in the port area. There may be incidents of violence between harbour workers or due to illegal entrants. Such incidents require increased security measures and regular review of relations between employees. The port management has developed appropriate disciplinary procedures and crisis response plans to prevent violent incidents.

Another security risk arises from the use of false identities. Unauthorised access to the port can be made through fake identities or identity theft. In order to prevent such situations, identity verification systems have been strengthened and advanced security measures such as biometric verification have been introduced.

Apart from the port personnel, a large number of public and private sector employees operating in the port also have access to the port. In addition to the daily business visits of port customers, subcontractor employees, agency and customs employees who are constantly in the port have access to different parts of the port. It would be beneficial for port security to have signs and warnings that are immediately recognisable at first glance indicating this prohibition in places where it is not allowed or prohibited to enter the port. Control measures should be taken to ensure that only personnel with permission can enter especially sensitive areas within the port. All technical measures should be taken in open and closed areas where dangerous cargoes are stored. In addition, electromagnetic, cyber, nuclear, biological and chemical attacks should also be taken into consideration.

Security in ports covers the measures taken against man-made threats. Measures to be taken against security risks are analysed under four headings.

- **Port Entry and Exit Controls**

Port security starts at the gate, therefore identity checks of vehicles and persons entering the port must be carried out meticulously. Authorised units should allow only authorised personnel and registered visitors to enter the port area by performing identity verification at the entry points. In addition, containers carrying cargo should be subjected to detailed security scans to detect any illegal substances, dangerous materials or smuggling-related elements. The contents of the containers should be examined by using modern scanning systems and it should be aimed to keep the security at the highest level in the port area. In addition, various physical and technological security measures should be implemented to prevent unauthorised persons from entering the port area. Security cameras, biometric verification systems and security personnel actively work at the access points to prevent unauthorised entry and ensure the security of the port.

- **Combating Smuggling and Illegal Transport**

Containers arriving and departing from ports should be subjected to detailed inspections. Advanced scanning systems should be used to detect contraband and illegal substances and the contents of containers should be examined sensitively. These controls are of great importance for the prevention of illegal activities in the port area and the safe conduct of trade.

Furthermore, inspection processes should be made more effective by working in close co-operation with customs authorities and security forces. Thanks to the coordination between the competent authorities, risky cargoes can be quickly identified and necessary legal actions can be taken. This cooperation contributes to the safe and orderly conduct of port operations and ensures compliance with national and international security standards. In particular, the use of specially trained detector dogs against drug smuggling and the scanning of suspicious containers are practices successfully implemented in our ports.

- **Measures Against Piracy and Terrorism Threats**

In order to keep port security at the highest level, security teams should carry out regular patrols to prevent unauthorised entry, detect suspicious situations and respond quickly to potential threats. In addition, emergency alarm systems and camera surveillance should be actively used to increase security in the port area. Advanced security cameras located in different parts of the port can detect any security breach instantly by monitoring 24 hours a day without interruption. Emergency alarm systems, on the other hand, allow effective intervention by quickly informing the authorities in case of a possible threat or emergency.

In order to prevent possible suicide attacks on ships or port facilities by speedboats loaded with explosives, the sea entry points of the ports should be well controlled.

Floating fixed and mobile sea barriers can be used against sabotage attacks from the sea. In addition, only approved small vessels such as fishing boats and speedboats should be allowed to navigate in the harbour entrance - exit and navigation channels. The airspace should also be controlled to ensure the security of highly sensitive ships such as LNG - LPG, and drones and unmanned aerial vehicles should not be allowed to fly over and around the harbour.

Port entrances and exits should be controlled very well against the introduction of explosive materials into the port area both by land and sea. Ship's provisions and provisions delivery vehicle must be checked in terms of security measures. Confirmation of the provisions order should be obtained and the provisions vehicle should be accompanied until the delivery to the ship.

In passenger ports, all baggage entering the port and disembarking from the ship must be scanned and unclaimed baggage must be kept safely in a place that does not pose a risk.

A significant part of the harbours are surrounded by different industrial facilities in residential areas or industrial areas. It is necessary to ensure environmental security as well as controlled entry and exit of the harbour.

- **Cyber Security Measures**

It is aimed to prevent unauthorised access and data breaches by protecting port operation systems against possible cyber attacks. In this context, digital infrastructure is continuously updated and advanced security protocols are implemented.

Strong encryption methods and firewalls play an important role among the measures taken against unauthorised access. Each entry to the port systems is subjected to strict authentication processes and only authorised personnel are allowed access. Firewalls protect the integrity of the systems by preventing malware and external threats.

Comprehensive security measures increase the resilience of port operations against digital threats, while contributing to a working environment that complies with international security standards.

Measures to be taken against security risks, which are briefly categorised under four headings, are evaluated more broadly in "Protection and Security Plans". The prepared "Protection and Security Plans" are submitted to the Governor's Office. This plan evaluates many topics such as fire, natural gas leakage, electricity leakage, theft, earthquake and natural disasters, sabotage, mass actions. In addition, emergency plans are prepared to cover both safety and security incidents.

SPECIAL FILE 2: CYBER SECURITY IN PORTS[66]

1. Introduction and Description

a. Definition of cyber security in ports

With the digitalisation of port operations, cyber security has become a strategic priority for the safety, business continuity and competitiveness of ports. **Cybersecurity in ports** is the set of all processes, policies, technical measures and organisational structures to ensure the confidentiality, integrity, availability, resilience and security of digital systems used in port infrastructures, including both information technologies (IT) and operational technologies (OT)[67,68].

According to the port cyber security guide developed by the International Association of Ports and Harbors (IAPH), this concept encompasses not only the protection of digital systems, but also **the development of a common understanding of risk among all stakeholders within the port community, the sharing of threat intelligence and the ability to respond to crises collaboratively[69].**

In the IMO document MSC-FAL.1/Circ.3, **cyber risks** are defined as "the intentional or unintentional exploitation of information and communication systems in a way that may affect operational safety, ship and port security" . These risks are not limited to data loss or financial damages, but may also result in direct disruption of physical operations (e.g. OT systems such as cranes, entry/transit systems, fuel pumps) and jeopardise safety and security.

Today, ports are equipped with **integrated digital systems, smart devices, autonomous vehicles, artificial intelligence-supported processes** and **remote management** infrastructures. This transformation has led to the dependence of many areas such as terminal operations, customs systems, entry-exit controls, voyage planning and cargo tracking on IT/OT systems. Therefore, any cyber-attack against these systems can disrupt the functioning of not only the port but also the entire supply chain.

Cyber security in this context;

- Harbour information systems (LIS),
- Port community systems (PCS),
- OT systems such as Supervisory Control and Data Acquisition (SCADA), Distributed Control System (DCS) and Programmable Logic Controller (PLC),
- Navigation support systems such as Automatic Identification System (AIS), Electronic Chart Display and Information System (ECDIS),
- It includes the processes of prevention, detection, response and recovery of potential threats on security infrastructures such as camera, access control and fire alarm systems[71,72].

b. The difference between IT (Information Technology) and OT (Operational Technology)

In order to properly manage cyber security risks in port infrastructures, it is critical to clearly understand the difference between Information Technologies (IT) and Operational Technologies (OT).

- **IT systems** are systems focussed on data processing, transmission and storage. Digital solutions such as port information systems (LIS), ship planning software, terminal operating systems, e-mail, office network and cloud services are considered as IT. These systems are usually managed with the goal of high availability and data security.
- **OT systems** are the whole of hardware and software that monitor, manage and automate physical

[66] Faruk Doğan TURKLIM Secretary General
[67] IMO, MSC-FAL.1/Circ.3/Rev.2, Guidelines on Maritime Cyber Risk Management, 2021
[68] ENISA, Cyber Risk Management for Ports, 2022.
[69] IAPH, Cybersecurity Guidelines for Ports, 2021
[70] IMO, MSC-FAL.1/Circ.3/Rev.2, Guidelines on Maritime Cyber Risk Management, 2021
[71] CISA & TSA (2020), Port Facility Cybersecurity Risks Infographic.
[72] IMO (2018), Resolution MSC.428(98) – Maritime Cyber Risk Management in Safety Management Systems.

processes. Infrastructures such as crane automation systems, refuelling pumps, access control systems, SCADA and PLC are included in the OT area. The priority in OT systems is to ensure the **continuity** and **safety** of operations.

As these two technology areas are increasingly intertwined in ports, a cyber security breach in one can directly affect the other. For example, malware against an IT system can halt loading operations conducted through OT. Therefore, cyber security strategies in ports should be developed with a holistic approach covering both IT and OT components[73,74,75].

c. Why has cyber security now become critical for port safety and business continuity?

Ports are not only places where goods are physically transferred, but also complex logistics centres managed by intensive data exchange, automation and digital systems. With increasing digitalisation, cyber threats are not limited to data breaches, but have reached a level that has a direct impact on physical operations, safety and service continuity.

The reasons that stand out are the following:

- If OT systems become the target of cyber-attacks, physical infrastructure such as cranes, gate control systems, refuelling pumps, etc. can be rendered non-functional or become hazardous to occupational health, safety and security or the environment[76].
- Ransomware and data encryption attacks can disrupt the operations of many port businesses for days, causing millions of dollars in losses (e.g. Port of San Diego, Maersk).
- The sensitivity and integrated nature of the global supply chain means that a cyber incident at a port can have global, rather than regional, impacts.
- Threats to Positioning, Navigation, and Timing (PNT) Systems (GPS jamming, AIS spoofing) can have serious consequences such as collisions and diversions in maritime traffic[77].
- Cyber attacks can support organised criminal activities such as smuggling, illegal cargo entry or data manipulation[78].

As a result, port safety must now be protected not only against physical threats but also against digital exploits. Without cyber security measures, an attack can lead not only to operational disruption but also to environmental, economic and security crises.

2. Major Cyber Threats and Risks to Ports

In port operations where digitalisation is accelerating, cyber threats have reached a level that can cause not only digital data loss but also **physical operational interruptions and security vulnerabilities.** The main cyber threats to ports are summarised under the following headings:

a. Cyber Attack Software for Ports (Malware Threats)

Digitalised port infrastructures consist of complex and interconnected information (IT) and operational technology (OT) systems. The diversity of these systems increases the risk of different types of malware infiltrating port environments and causing widespread impacts. Cyber attack software for ports is not limited to the common ransomware, but can be divided into many categories such as spyware, remote access tools (RATs), worms, Trojan horses, botnet software and USB-based malware.

• Ransomware

In recent years, the most common type of threat to ports is **ransomware** attacks. By encrypting critical systems, it causes operations to stop and serious financial losses. In the Port of San Diego (2018) and Port of Houston (2021) incidents, port information systems were closed for days and reservation systems were affected by attacks.[79]

[73]IAPH, Cybersecurity Guidelines for Ports, 2021
[74]CISA & TSA (2020), Port Facility Cybersecurity Risks Infographic
[75]BIMCO, ICS, IUMI, INTERTANKO & INTERCARGO. (2021). Cybersecurity Threat to Ports – Whitepaper. Published May 2021.
[76]Institution of Engineering and Technology. Good Practice Guide: Cyber Security for Ports and Port Systems, 2020.
[77]MarineDeal News. (2021, October 8). The insidious enemy of developing technology: Cyber attacks.
[78]Dryad Global. (2022, June 2). Interview: Mitigating cyber-threats in the maritime industry.
[79]Stormshield. (2023). Cybermarétique: A Short History of Cyberattacks Against Ports. Publication Date: 3 July 2023.

- **Spyware and Information Leakage**

Spyware is among the malicious software that secretly settles in systems and **leaks data, passwords or trade secrets** without the user noticing. In port environments, such software can lead **to the capture of sensitive commercial data** such as customs declarations, container manifests, tariff information. The information obtained can be used especially for **smuggling activities and illegal trade**. In some cases in European ports, it has been reported that spyware infiltrating port community systems (PCS) has been used by **organised crime networks to perform targeted smuggled cargo transfers** by stealing container location information[80].

- **Worms and Autonomous Propagation Threats**

Worms are malicious software that can automatically spread over networks by self-replication. Especially **in poorly isolated OT (operational technology) infrastructures**, it is easy to pass from system to system and **the spread rate is quite high**. For example, a worm infecting a loading crane system can cause **large-scale operational disruptions** by spreading to the entire port network in a short time. The 2017 **NotPetya[81] attack** clearly demonstrated the devastating impact of this threat type; approximately **45,000 devices** on Maersk's systems **were affected**, **causing losses of around USD 300 million[82].**

- **Trojans and Remote Access Tools (RATs)**

Trojan horses (Trojans) and **remote access tools (RATs)** are malware that infiltrate systems, often disguised as legitimate software or documents, and then create **backdoors** to allow external access. Such threats can lead to **remote control** of port systems, unauthorised access to critical **infrastructure** and **data manipulation**. Cases have been reported where PCS (Port Community System) systems have been infiltrated with documents containing Trojan horses, especially through **fake e-mails sent to ship agents**, thus jeopardising port operation[83].

- **Malware Targeting OT Systems (SCADA-targeting malware)**

SCADA-targeting malware is software developed specifically to infiltrate and target operational technology infrastructures such as **SCADA, DCS and PLC[84]**. Such software **can create serious operational and security risks** by directly controlling physical equipment such as **cranes, pumping systems, access controls and security mechanisms[85]**. While software such as **Stuxnet** and **Triton** targeting industrial systems are examples of this category, it is assessed that such threats in ports **may target critical infrastructure operations such as energy facilities and fuel terminals.**

- **Portable Media and USB Based Threats**

Portable media and USB-based threats are malware that usually infect systems via **USB sticks, external discs or portable maintenance devices**. These types of threats pose a serious risk, especially **in OT systems that do not have a network connection or have limited internet access.** Systems where updates are done manually or maintenance is performed with external devices are more vulnerable to these attacks. In some cases, it has been detected that malware was transmitted via maintenance devices connected to harbour cranes, which affected operational systems[86].

- **•Botnet Software and DDoS Attacks**

Botnet software and DDoS (Distributed Denial of Service) attacks are types of attacks in which attackers **bring together many devices through command and control (C2) servers and generate simultaneous and intense access traffic** against target systems. In ports, these attacks usually target digital services such as **web-based reservation systems, online customer portals** and **payment systems.** Service disruption can severely damage customer satisfaction and business continuity. In

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[80]The Readable. (2023). Maritime cyber threats: Drug trafficking and supply chain security. . Publication Date: 6 December 2023.
[81]NotPetya looked like typical ransomware, but was actually malware that exhibited worm-like behaviour, with the malicious intent of destroying data (wiper). NotPetya was capable of automatically replicating itself across a network using a vulnerability called EternalBlue.
[82]LRQA. (2022). NotPetya ransomware attack on Maersk: Key learnings. Published: 4 July 2022.
[83]Hurd, Barry. (2023). Port of Seattle Hacked: Is the Future Compromised? LinkedIn Articles.
[84]Verma, Rahul. (2023). SCADA Security: Safeguarding Critical Infrastructure in Industrial Systems. LinkedIn Articles.
[85]Atlantic Council. (2021). Rising Maritime Cyber Threats: A Call for Operational Collaboration. Washington, DC: Atlantic Council.
[86]SAFETY4SEA(2023). Cyber attacks on maritime OT systems increased 900% in last three years. Published: 5 October 2023.

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2022, **massive DDoS attacks** on the online portals of some Asian ports led to severe disruptions in customer service and transaction delays[87].

b. ECDIS-AIS Manipulation

Manipulation of ECDIS (Electronic Chart Display and Information System) and AIS (Automatic Identification System) systems can have consequences such as misleading ship routes, displaying false ship identities or jeopardising navigation[88].

ECDIS and AIS system manipulations can seriously affect not only ship navigation but also ports and harbour systems. AIS data is critical for port traffic management (VTS), security controls and operational planning. By manipulating this data, the true position, identity and navigation routes of vessels can be concealed or altered. This can lead to in-port collisions, illegal vessel entries, smuggling, resource planning errors and even routing errors that can damage critical infrastructure[89].

Manipulation of ECDIS data can cause ships approaching ports to follow incorrect routes, with serious consequences such as environmental disasters, infrastructure damage and loss of life. Such manipulations can be carried out by exploiting the vulnerabilities of port security and cyber defence systems, especially in complex and busy port areas. Therefore, these threats should be addressed not only within the scope of cyber security but also national security and environmental security[90].

c. Cyber Attacks on OT Systems with Physical Impact

Physical cyber-attacks on OT (Operational Technology) systems create serious security, continuity and safety risks by directly targeting the systems that form the heart of operations in ports. OT components such as crane automation systems, pump control units, energy distribution infrastructure, fire alarm systems and access control devices stand out as **high impact and consequential targets** for cyber attackers[91].

Attacks on such systems:

- It can increase accident risks and threaten human and environmental safety,
- It can bring loading and unloading operations to a standstill,
- It can cause physical damage and loss of labour.

These systems, which cannot be protected by traditional IT security measures, require special OT security architectures and segmentation solutions. Therefore, OT cyber security should be considered as an integral component of port security.

d.PNT (Positioning, Navigation and Timing) Attacks and Results

Most of the operations in ports are dependent **on position, timing and orientation (PNT)** data. Attacks such as **jamming, jamming or spoofing of GPS signals**;

- Disruption of ship positioning,
- Incorrect orientation of automatic cranes or transport vehicles,
- May cause collision, fire and environmental hazards[92].

[87]Tech Wire Asia. (2023). Why are DDoS attacks increasing in APAC? Publication Date: 15 November 2023.
[88]Arslan, O., & Arslan, C. (2021). Impact of Spoofing of Navigation Systems on Maritime Situational Awareness. ResearchGate
[89]IMO, MSC-FAL.1/Circ.3/Rev.2, Guidelines on Maritime Cyber Risk Management, 2021
[90]NATO Maritime Interdiction Operations Training Center (NMIOTC), NMIOTC Journal, Issue 25, 2023
[91]OT Insights Center. (2024). 2024 Threat Report – OT Cyberattacks with Physical Consequences.
[92]CISA – Cybersecurity and Infrastructure Security Agency. (2021). Understanding Vulnerabilities of Positioning, Navigation, and Timing (PNT)

e. Human Risks: Social Engineering, Internal Threat, Lack of Training

If the security awareness of port employees is insufficient, it is possible to infiltrate systems by **phishing via e-mail, infection via USB/portable devices, unauthorised access, password vulnerabilities.**

In addition, **insider threats** or subcontracted employees can cause serious system vulnerabilities. Cyber security awareness, regular trainings and drills play a key role in mitigating these risks[93].

In this context, the cyber threat surface in ports has expanded due to both technical systems (IT/OT) and human factors, and an environment has been created where a single vulnerability can lead to chain effects in both financial and physical dimensions. Therefore, the implementation of holistic, multi-layered and continuously updated cyber security systems has become extremely necessary for port systems[94].

Malware targeting ports is multifaceted and not limited to ransomware. The increase in OT system-specific software, social engineering-assisted infections and data-driven espionage activities require holistic, preventive and detection solutions in the sector. Especially in port infrastructures:

- Segmentation,
- Up-to-date antivirus solutions,
- Event detection (IDS/IPS),
- Secure software and backup policies are vital.

In addition, **data leaks** through port information systems and PCS (Port Community Systems) pose a high risk to commercial information and supply chain security.

3. Global and Regional Developments

a. Developments under IMO MSC.428(98), IAPH, ENISA and EU NIS Directive

With the **International Maritime Organization (IMO)** resolution **MSC.428(98), the integration of cyber risk management into the ISM Code** has been made mandatory as of 1 January 2021[95]. This decision stipulates that cyber risks must be clearly identified, assessed and managed in the security management systems of ship and port operators.

The Port Cyber Security Guidelines published by the **International Association of Ports and Harbors (IAPH)** in 2021 provided a risk-based approach, threat intelligence sharing and corporate governance model for port businesses[96].

The European Union Agency for Cybersecurity (ENISA)[97] has published guidelines aimed at strengthening **the digital resilience of critical infrastructures**, especially in the port and maritime sector **(Guidelines - Cyber Risk Management for Ports)[98]**, in this context, **the EU NIS Directive (EU Network and Information Systems Directive)[99]** clarified the cyber security obligations of digital service providers, including ports.

b. Examples of Global Cyber Attacks in Recent Years

Since 2015, cyber-attacks targeting the maritime port sector have significantly increased in frequency, severity and sophistication. Below is a structured summary of prominent incidents,

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[93] AEP Maritime Cybersecurity White Paper.docx
[94] Akyıldız, H., & Gökozan, H. (2020). A conceptual model of port cybersecurity and threats: Knowledge and understanding. Journal of Traffic and Transportation Engineering (English Edition)
[95] IMO Resolution MSC.428(98).pdf
[96] IAPH-Cybersecurity-Guidelines-version-1_0.pdf
[97] Although Türkiye is not a member of ENISA, it voluntarily complies with the agency's guidelines and best practices and carries out indirect cooperation in the field of port cyber security.
[98] ENISA – European Union Agency for Cybersecurity. (2022). Guidelines – Cyber Risk Management for Ports.
[99] European Union. (2023). Directive (EU) 2022/2555 (NIS2 Directive) on measures for a high common level of cybersecurity across the Union.

trends and available statistical data based on verified reports from ENISA, BIMCO, IAPH, CRIMSON, TXOne and academic sources.

- **Port of Antwerp (Belgium) - 2011-2013 (Revealed in 2015)**[100, 101]
  - **Attack Type:** Insider collaboration and malware
  - **Impact:** Drug traffickers infiltrated terminal systems and manipulated container routes.

- **Maersk – NotPetya (2017)**[102]
  - **Type:** NotPetya virus (wiper malware)
  - **Impact:** Maersk's global operations halted; 45,000 computers and 4,000 servers wiped
  - **Loss:** Approximately USD 300 million

- **Cosco (2018)**[103]
  - **Type:** Ransomware (ransomware)
  - **Impact:** US operations halted, email and booking systems down

- **San Diego Harbour (2018)**[104]
  - **Type:** Ransomware
  - **Impact:** Corporate systems were down for several days

- **Barselona Harbour (2018)**[105]
  - **Type:** Targeted cyber attacks
  - **Impact:** Terminal delays, operational disruptions

- **Iran Ports - Bandar Abbas / Shahid Rajaee (2020)**[106]
  - **Species:** Cyber attack on OT systems
  - **Impact:** Delays in logistics systems, politically motivated attack

- **Port of Houston (2021)**[107]
  - **Type:** Unauthorised access (zero-day vulnerability in password management system)
  - **Impact:** Early detection and prevention of the attack

- **India - Jawaharlal Nehru Port (2022)**[108]
  - **Type:** Ransomware
  - **Impact:** Customs clearance slowed down, container movement disrupted

- **Numerous Ports in Asia - DDoS Attacks (2022–2023)**[109, 110, 111]
  - **Type:** Botnet-based DDoS
  - **Impact:** Customer portals, tracking and booking systems stopped

- **Maritime Cyber Threat Trends between 2015-2024**
  - There is a 900% increase in attacks on OT systems between 2017-2022[112]
  - In the survey conducted by ENISA among organisations in the logistics chain;[113]
    - 86% have implemented information and communication technologies / operational technology (ICT/OT) supply chain cyber security policies,
    - 47% allocated budget for ICT/OT supply chain cyber security,

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[100]Europol. (2013). Drug traffickers use hackers to infiltrate port security systems. Europol Newsroom
[101]Al-Mhiqani, M. N., Anbar, M., Alzain, M. A., & Abdullah, R. (2024). Maritime cyber security.ResearchGate.
[102]Maersk. (2017). Maersk statement on the cyber-attack (NotPetya). A.P. Møller – Mærsk.
[103]Cimpanu, C. (2018, July 26). COSCO Shipping Lines Hit by Ransomware Attack. BleepingComputer.
[104]Port of San Diego. (2018, September 27). Port of San Diego Experiencing Disruption to Information Technology Systems. Official Statement.
[105]Ilascu, I. (2018, September 21). Port of Barcelona Suffers Cyberattack. BleepingComputer.
[106]Sanger, D. E., Perlroth, N., & Bergman, R. (2020, May 18). Israel Hack of Iranian Port Is Latest Salvo in Cyberwar. The New York Times.
[107]Moore, M. (2021, September 23). Port of Houston Quells Cyberattack. Infosecurity Magazine.
[108]The Loadstar. (2022, February 22). Ransomware attack hits Nhava Sheva container terminal.
[109]TXOne Networks. (2023). The Crisis of Convergence: OT/ICS Cybersecurity 2023.
[110]OTORIO. (2022). 2022 - 2023 Cyberattacks on Operational Environments.
[111]StormWall. (2023). DDoS Attack Report in APAC 2023.
[112]SAFETY4SEA. (2023, Ekim 26). Smartships hold great promise for shipping, says new BV report.
[113]ENISA – European Union Agency for Cybersecurity. (2023, June). Good Practices for Supply Chain Cybersecurity

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• 76% do not have specific roles and responsibilities assigned for ICT/OT supply chain cyber security,
• 61% require security certificates from their suppliers, 43% use security rating services, 37% analyse the security risks of their suppliers through review or risk assessment methods, and only 9% do not assess supply chain security risks in any way,
• 52% have a strict patch management policy and only 0 to 20% of their assets are excluded, while 13.5% have no visibility into the patch status of 50% or more of their information assets,
• 46% patch critical vulnerabilities in less than one month, while the other 46% apply these patches in maximum 6 months.

• **Looking at the world in general;**

- 90% of shipping companies spend less than 20% of their IT budgets on cyber security and resilience, while 70% spend less than 10%[114], more than 80% of ports have no dedicated cyber security budget[115],
- According to the Information Systems Audit and Control Association (ISACA), while 52% of cybersecurity professionals report an increase in cyberattacks compared to the previous year, most organisations neglect regular cyber risk assessments - only 8% do them monthly and 40% do them annually[116].
- The most common attacks are Ransomware and phishing,
- There is a shift of attack targets from IT to OT (e.g. cranes, pumps, access systems).

When the stated issues are evaluated together;

- As can be seen from the attacks and the change in the threat over time, sea ports have now become the primary targets of cyber threat actors as **critical infrastructure**.
- Attacks have gone beyond affecting business systems to the point of disrupting **physical operations and supply chains.**
- Such attacks not only cause operational disruptions, but also cause significant damage to **data security, customer trust and reputation.**
- Therefore, **cyber-physical resilience**, mandatory **cyber risk management** and public-private **threat intelligence sharing** have become essential.

c. Increasing Threat Dynamics in the Mediterranean and Black Sea Region

The Mediterranean and Black Sea, as regions of geopolitical mobility and energy transport, have **become high-value targets for cyber attackers and organised crime networks[117].**

- Critical infrastructures such as energy terminals, LNG facilities and container ports face a wide range of threats, from ransomware attacks to espionage activities.
- At the same time, the number of technically oriented attacks such as **AIS manipulation, PNT jamming** and **unauthorised access to port management systems** is increasing[118,119].
- The low level of security of OT systems in most of the ports in the region increases the operational consequences of attacks.

These developments show that the global port network has become **digitally interconnected and interdependent**; therefore, it is imperative to update cyber security measures according to international standards and to increase regional cooperation.

[114]MarineDeal News. (2016). Maritime cyber security.
[115]ENISA. (2022). European Cybersecurity Month 2022 Campaign Report.
[116]Secureframe. (2024). 30+ Risk Management Statistics You Need to Know in 2024.
[117]Dryad Global. (2022, June 2). Interview: Mitigating cyber-threats in the maritime industry.
[118]CISA & TSA (2020), Port Facility Cybersecurity Risks Infographic
[119]MarineDeal News. (2021, October 8). The insidious enemy of developing technology: Cyber attacks
[120]TÜRKLİM. (2024). TÜRKLİM 2024 Sector Performance and Digital Transformation Report.
[121]ENISA – European Union Agency for Cybersecurity. (2023, June). Good Practices for Supply Chain Cybersecurity.
[122]TXOne Networks. (2023). The Crisis of Convergence: OT/ICS Cybersecurity 2023.
[123]OTORIO. (2022). 2022–2023 Cyberattacks on Operational Environments.
[124]TXOne Networks. (2023). The Crisis of Convergence: OT/ICS Cybersecurity in 2023 – Annual Report

4. Current Situation in Turkish Ports

a. Cyber Security Awareness and Preparedness Level of Port Operators in Türkiye

While the digitalisation rate of port operators in Türkiye has increased in recent years, the level of cyber security awareness and preparedness varies from port to port[120]. Although large-scale container and commercial ports have some level of IT security measures in place, holistic cyber security approaches covering OT systems are not yet widespread[121, 122, 123]. As of 2023, the level of maturity in OT/ICS security is only basic compliance in most organisations; for example, only 38% of organisations have dedicated OT security teams and most OT environments are still vulnerable to IT-borne threats[124].

The risk-based management models recommended by IAPH and ENISA have not yet been fully adopted at the organisational level in Turkish ports. There is significant potential for improvement especially in areas such as **cyber maturity assessment, CISO appointment, exercise planning and incident response scenarios**[125].

b. Status of Ports within the Scope of Critical Infrastructure

The definition of critical infrastructure in the Law is stated as "Infrastructures hosting information systems that may cause loss of life, large-scale economic damage and security gaps or disruption of public order when the confidentiality, integrity or accessibility of the information/data it processes is disrupted"[126]. In this context, among the sectors to be considered as critical infrastructure determined by the Cyber Security Board, especially the **energy** (electricity generation, transmission and distribution networks, natural gas and petroleum infrastructures), **production and industrial control systems** (ICS/SCADA) (industrial automation systems in sectors such as automotive, defence industry, chemical and heavy industry) and transportation (aviation, railways, maritime and land transport infrastructures, intelligent transportation systems, ports and airports) sectors are sectors directly or indirectly related to port activities[127]. However, in most ports, cyber security is still managed with more limited resources than physical security measures.

Defence mechanisms such as controls for the protection of operational technology (OT) systems, backup policies against ransomware risks and intrusion detection systems **are not sufficiently developed**[128]. Mandatory audit and certification mechanisms at national level for ports in the critical infrastructure category are **not yet in place**[129].

c. Existing Regulations

•International Maritime Organisation (IMO) Regulations:

As a member of the International Maritime Organisation (IMO), Türkiye is obliged to integrate maritime cyber security regulations into its national practices. The most fundamental of these regulations is Resolution MSC.428(98) adopted in 2017[130]. According to this resolution, **ship operators covered by the ISM (International Secure Management)** Code are obliged to integrate cyber risks into their security management systems (SMS) from 1 January 2021. Although the decision does not directly cover port operators, Türkiye takes into account this obligation within the framework of both flag state and port state responsibility and adapts national and international best practices to strengthen cyber security in ports.

Another important document that supports the implementation of this resolution and serves as a guideline is the IMO guideline **MSC-FAL.1/Circ.3/Rev.2**[131]. **Although** this guideline **does not directly cover port operations, it is a guide that contains principles applicable to ports and aims to guide all**

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[125] TMMOB EMO. (2024). Critical Infrastructures and Cyber Security - 2024/1 Newsletter.
[126] Grand National Assembly of Türkiye (2025). Cyber Security Law, Law No: 7545, Adoption Date: 12.03.2025, OG Date: 19.03.2025, Number: 32846.
[127] National Cyber Security Strategy and 2013-2014 Action Plan
[128] TMMOB EMO. (2024). Critical Infrastructures and Cyber Security - 2024/1 Newsletter.
[129] Özker, Uğur. (2022). Critical Infrastructure and Cyber Security in Türkiye. Istanbul: Konrad-Adenauer-Stiftung Türkiye & EDAM Publication
[130] IMO – International Maritime Organization. (2017). Resolution MSC.428(98) – Maritime Cyber Risk Management in Safety Management Systems. Adopted on 16 June 2017
[131] IMO - International Maritime Organisation. (2021). MSC-FAL.1/Circ.3/Rev.2 - Guidelines on Maritime Cyber Risk Management. Publication Date: 14 May 2021.

maritime stakeholders, including ships and coastal facilities, on cyber risk management. It provides methods for identifying cyber threats, assessing and mitigating risks. In particular, it recommends a holistic approach that includes the combined assessment of information technology (IT) and operational technology (OT) systems and supply chain security. In Türkiye, these approaches should be integrated into national port security plans, ship security plans and facility security policies.

Furthermore, the **SOLAS Convention**, to which Türkiye is a party, and the **ISPS Code** implemented within this scope require the assessment of cyber threats as well as physical security in maritime. Therefore, cyber threats should be included in the security plans prepared for Turkish ports and Turkish flagged ships, and necessary precautions, training and exercise processes should be planned. In line with IMO regulations, it has become an international obligation for Türkiye to integrate cyber risk management into its corporate security culture

IMO recommends the **integration of** the ISO/IEC 27001 standard as a guide for information security management, in particular to ensure that the ISPS Code adapts to the evolving cyber threat environment.

The ISO/IEC 27001 standard provides a framework to identify, control and manage risks to cyber threats in port facilities with a continuous improvement approach. From the point of view of integrity and business continuity of complex IT and OT systems in the port sector, the implementation of ISO 27001 provides a strong basis for both **meeting the obligations under ISPS and digital reliability in global trade.**

In this context, the implementation of ISO/IEC 27001 is a highly strategic and recommended approach both **to meet the new expectations of the ISPS Code regarding cyber security and to manage the digitalisation processes of ports in a secure manner**. Although ISO 27001 is not currently mandatory for port facilities in Türkiye, integrating this standard into Port Facility Security Plans will provide significant advantages in terms of both regulatory compliance and international competitiveness.

• Law No. 7545 on Cyber Security:
The newly published **Cyber Security Law (Law No. 7545, Official Gazette: 19 March 2025)**[132] comprehensively redefined the cyber security obligations of critical infrastructures in Türkiye, including **port operators**. The Law categorises **infrastructures hosting information systems that may cause loss of life, major economic damage and disruption of public order** as "critical infrastructure" and makes it a legal obligation to protect them against cyber-attacks.

Within this framework, port operators are obliged to fulfil numerous technical and managerial responsibilities such as monitoring cyber threats, conducting penetration tests, establishing incident response teams (SOME), performing security audits and increasing controls on information systems. Within this framework, it is mandatory **to take necessary measures to ensure the cyber security of critical infrastructures**, to create system inventories and to use only authorised products and experts in these infrastructures.

• National Cyber Security Strategy and Action Plan (2024-2028)
The National Cyber Security Strategy and Action Plan covering the period 2024-2028[133] provides a very important roadmap for critical infrastructures such as ports in Türkiye. This document introduces various strategic targets and responsibilities, especially for port operators.

One of the highest priority issues in the strategy is defined as "**cyber resilience**". In the case of critical infrastructures, strengthening ICT systems with a **risk-based analysis** approach at both corporate and sectoral levels is adopted as the main strategy to ensure security. This reveals that

[132] Cyber Security Law, Law No. 7545, Adoption Date: 12/03/2025, Official Gazette, Issue: 32846, Publication Date: 19/03/2025.
[133] T.C. Ministry of Transport and Infrastructure. (2023). National Cyber Security Strategy and Action Plan (2024-2028).

not only technological measures but also business continuity and emergency planning should be developed for ports.
Under the title of "**Proactive Cyber Defence and Deterrence**" in the Strategy, it is aimed to develop national and sectoral threat intelligence in order to detect cyber threats against ports before they occur and to prevent attacks at an early stage. This makes it necessary for port enterprises to participate in threat sharing platforms within themselves or across the sector. This strategy will not only make ports more resilient against cyber threats, but will also increase Türkiye's international visibility and credibility in the field of cyber security.

5. Cyber Security Capacity Development and Strategic Needs

Enhancing the institutional capacity of Turkish ports in the area of cybersecurity should not only be addressed through technology investment, but also through organisational structuring, systematic risk management, technical infrastructure strengthening and human resource development. The following areas constitute the priority strategic needs for enhancing the cyber resilience of ports:

a. Creating CISO/CSIRT/SOC Structures

Appointing a Chief Information Security Officer (CISO), establishing a Cyber Incident Response Team (CSIRT) and establishing a Security Operations Centre (SOC) in large-scale ports are the basic institutional structures for effective management of both threat detection and response processes[134]. It is especially important that these structures work integrated with the Port Security Committees under the ISPS Code.

b. Risk Assessment and Cyber Maturity Models

The Port Cybersecurity Maturity Model proposed by ENISA is an effective tool for assessing the cybersecurity levels of ports and preparing development plans. This model defines progressive maturity levels based on asset inventory, risk appetite, IT/OT integration and threat intelligence utilisation[135]. The implementation of such structures in Turkish ports will make cyber risk management measurable and sustainable.

c. Segmentation, Backup and Physical Protection for OT Systems

Due to the increase in attacks on OT infrastructures, it is of great importance to implement defence-in-depth measures such as network segmentation, access control, software updates, backup policies and physical access security[136,137]. In addition, isolated environments should be created against threats from portable devices during manual maintenance operations in OT systems[138].

d. Training, Drills and Awareness Activities

The weakest link in cyber security is still "**human**". Therefore, regular awareness trainings, role-based technical training programmes and exercise scenarios should be implemented for personnel. As recommended by IMO and IAPH, exercises should be extended not only to IT personnel but also to operational and management staff[139]. Cultural transformation should be encouraged with the understanding of "first line of defence is human".

The institutional structure and practices to be developed under these headings will contribute to both national security and global trade security by increasing the cyber resilience of Turkish ports.

[134] CISO Council. (2021). CISO Handbook. International CyberSecurity Center of Excellence (ICSCSI)
[135] ENISA – European Union Agency for Cybersecurity. (2022). Guidelines – Cyber Risk Management for Ports.
[136] Verve Industrial. (2021). Network Segmentation in OT Environments: Why It's Essential for ICS Security.
[137] Stouffer, K., Pillitteri, V., Lightman, S., Abrams, M., & Hahn, A. (2022). Guide to Industrial Control Systems (ICS) Security (NIST SP 800-82 Rev. 3). Gaithersburg, MD: National Institute of Standards and Technology.
[138] OTORIO. (2023). Mastering Security for OT Networks: Best Practices and Industrial Use Cases.
[139] CoESS – Confederation of European Security Services. (2023). Manual – Maritime Security Personnel: Recommendations for Training, Qualifications and Working Conditions.

6. Cooperation, Stakeholders and Harmonisation Process

Sustainable and effective management of cyber security in ports is possible not only through technical infrastructure and in-house measures, but also **through a multi-stakeholder cooperation and institutional coordination structure**. In Türkiye, it is necessary to establish a multi-layered governance model in which institutions and organisations with duties and responsibilities in this field will work together.

a. Roles and Coordination of National Actors

The Ministry of Transport and Infrastructure is the main public authority regulating and guiding the digital security of the port and maritime transport sector. In this context, **the Directorate General of Maritime Affairs (DGM)** has the role of supervising and guiding ISPS, ISM and cyber security integration for port operators.

TÜBİTAK BİLGEM is capable of providing cyber threat analysis, software security, indigenous security solutions and test infrastructure support for ports. On the other hand, **TÜRKLİM (Turkish Port Operators Association)**, representing the private side of the sector, acts as a coordination centre for information sharing among port operators, dissemination of good practices and development of recommendations for policy makers.

b. Public-Private Sector Cooperation and Joint Threat Intelligence Network

As recommended by organisations such as IAPH and ENISA, a "**Port Cyber Security Sharing and Coordination Platform (Port-CSIRT)" to be established with public-private sector cooperation** can increase threat awareness in the sector, enable faster response to incidents and reduce information asymmetry.

Through this network:

- Threat intelligence sharing (CTI),
- Joint exercise and scenario development,
- Mechanisms such as early notification of critical vulnerabilities can be implemented.

c. Integration and Harmonisation Process with International Organisations

Due to the integrated nature of ports with the global supply chain, **it is imperative** that port operators in Türkiye develop standards and protocols in line with organisations such as **IMO (International Maritime Organization), EMSA (European Maritime Safety Agency) and IAPH (International Association of Ports and Harbors).**

- Integration of cyber risks into ISM and ISPS systems in line with IMO resolutions MSC.428(98) and MSC-FAL.1/Circ.3,
- Dissemination of IAPH's cyber security maturity assessment tools,
- Türkiye's adaptation to the public-private partnership models proposed by ENISA within the scope of port security and NIS2 should be among the priority agendas.

In this context, it is a critical strategic necessity for Türkiye to build **a multi-layered, sustainable and resilient security architecture** for port cyber security through strong coordination among national actors and active participation in international networks.

7. 2025 Vision and Policy Recommendations

In an era of digitalised global trade, Türkiye's ports have to increase their competitiveness not only in terms of physical capacity, but also in terms of cyber resilience and digital reliability . The vision for 2025 should aim not only to develop defences against threats, but also to establish a cyber security ecosystem that is proactive, sustainable and in line with international standards.

a. Minimum Cyber Security Standards Should Be Established

In Turkish ports, minimum cyber security standards applicable to port enterprises of all scales should be determined. Within this framework, basic building blocks such as asset inventorying, IT/OT separation and segmentation, risk assessment cycle, contingency plans and user training programmes should be made mandatory. These standards should be in line with good practices recommended by ENISA and IAPH.

b. National Port Cyber Security Directive/Guideline should be developed

A "National Port Cyber Security Directive" to be prepared under the coordination of the Ministry of Transport and Infrastructure with the contributions of DGM and TÜRKLİM will provide the sector with a common language, framework and implementation guide. ISM/ISPS integration should be ensured in accordance with IMO resolution MSC.428(98) and scalable security steps should be described in the directive according to different port types.

c. Cyber Resilience Integrated to Green and Digital Port Vision

Cyber security should be considered as an integral component of the "green and digital harbour" strategy. Digitalisation applications such as smart grids, autonomous vehicles, sensor networks and AI-enabled load management systems also create new attack surfaces. Therefore, cyber security should be integrated with the principle of "security by design" at every stage of digitalisation.

d. Pilot Projects, R&D and Education Infrastructure should be Encouraged

Cyber security pilot projects should be initiated at selected strategic ports (e.g. energy terminals, container ports, passenger ports), where cyber drills, OT system tests and domestic security software solutions should be tested. R&D projects to be carried out in co-operation with TÜBİTAK and TSE will support the domestic product and service ecosystem, and qualified human resources will be trained in co-operation with universities and Vocational Schools.

Accordingly, in Türkiye's ports by 2025;

- Internationally harmonised cyber security management systems have been established,
- Corporate responsibility structures (CISO/CSIRT/SOC) have become widespread,
- Sector-specific policy documents and certification mechanisms have entered into force,
- A cyber-resilient port ecosystem supported by trained human resources is targeted.

8. Conclusion and Evaluation

Cyber security has become as critical a priority for port operators **as physical security**. The integrated nature of information and operational technology systems requires ports to be resilient not only against physical threats but also against digital attacks. The increase in automation systems, smart sensors, remote access platforms and artificial intelligence-supported processes with digitalisation **has expanded the attack surface** and created new areas of opportunity for threat actors.

Especially in a global order where the supply chain is accelerating and time has become a competitive factor, **the digital reliability of ports** has become a deciding factor for international cargo shippers and business partners. In the post-2025 era, **one of the most important factors that will determine** the **competitiveness** of ports is that their infrastructure is not only fast and efficient, but also **cyber resilient and reliable.**

Therefore, the cyber security architecture to be established in Turkish ports should be considered as a strategic investment not only for risk mitigation but also **for trust-based growth, reputation management and international integration.**

Expert Opinion: Faruk DOĞAN
TURKLIM Secretary General

FROM THE PERSPECTIVE OF SAFETY AND SECURITY IN TURKISH PORTS THREAT AND RISK ASSESSMENT

Ports are the cornerstones of global trade and economic growth. Türkiye's strategic location makes its ports critical for both trade and security. Therefore, it is of utmost importance that the safety and security threats faced by ports are accurately analysed, evaluated and appropriate measures are taken.

Distinction of Safety and Security Concepts

At this point, differentiating whether the threat to ports is safety or security related constitutes the first stage for planning appropriate risk mitigation measures by correctly analysing the risks that these threats will pose to the port facility.

Safety refers to protection against unintentional events such as accidents, technical failures and natural disasters, while **Security** aims to protect against intentional threats such as terrorism, sabotage and smuggling. Both concepts are critical to the sustainability of port operations and this difference needs to be understood correctly in order to develop appropriate strategies.

Safety and Security Threats to Turkish Ports

- **Natural Disasters:** As Türkiye is located in an earthquake zone, ports may be exposed to natural disasters such as earthquakes and tsunamis. In addition, other natural disasters such as storms and floods can also adversely affect port operations.

- **Threats from Climate Change:** Climate change impacts such as sea level rise or fall, extreme weather events and coastal erosion can threaten port infrastructure and operations.

- **Cyber Threats:** Cyber-attacks on port information systems, such as ransomware, data leakage and disruption of operational systems, can seriously disrupt the operation of ports.

- **Terrorist Attacks and Sabotage:** Ports may be the target of terrorist groups due to their strategic importance. There is a risk of physical damage, loss of life and economic collapse.

- **Organised Crime and Smuggling:** Ports can be used as transit points for illegal activities such as drug, human and arms trafficking, which threatens national security.

- **Insider Threat:** Internal threats such as intentional or unintentional information leakage from personnel, smuggling facilitation and system sabotage pose serious risks to port security.

- **Impact of Global Geopolitical Crises:** Global events such as wars, conflicts, regional instability and energy crises can directly or indirectly affect port operations.

Risks that threats may pose to ports

- **Operational Disruptions:** Situations such as disruption of loading and unloading processes, disruption of the supply chain can lead to economic losses.

- **Physical Infrastructure Damages:** Damage to critical infrastructure such as piers, docks, cranes and power lines can cause long-term disruptions.

- **Human Safety Risk:** The safety of employees and visitors may be jeopardised.

- **Risk of Environmental Disaster:** Leakage or spillage of hazardous substances can cause serious damage to the environment and incur clean-up costs.

- **Reputation Loss:** Security breaches damage the reputation of ports nationally and internationally, which can lead to loss of customers.

- **Financial Losses:** Financial consequences such as increased insurance premiums, criminal penalties and loss of investor confidence.

Sensitivities of Turkish Ports Against These Risks

- **Geographical and Geological Location:** The fact that Türkiye is located on active fault lines makes the ports especially in the Marmara, Aegean and Mediterranean regions vulnerable to earthquake risk.

- **Old and Inadequate Infrastructure:** Some ports have not undergone modernisation, which reduces disaster resilience and reduces operational efficiency.

- **Heavy Traffic and Large Areas:** In large and busy ports, monitoring and intervention difficulties increase, leading to security vulnerabilities.

- **Urbanisation and Border Security:** Ports close to urban centres facilitate unauthorised entry/exit and increase security risks.

- **Lack of Climate Adaptation:** Many ports lack adequate planning and infrastructure against climate change risks.

- **Staff Turnover and Low Security Awareness:** High staff turnover and inadequate training reduce the effectiveness of security procedures.

Basic Measures to be Taken

Structural and Technical Measures

- **Ground Investigations and Resilience Analyses:** It is important to assess the current condition of the port infrastructure and make necessary reinforcements.

- **Earthquake and Tsunami Early Warning Systems:** Integration of ports with national early warning systems such as AFAD and Kandilli Observatory is critical to mitigate the negative impacts of disasters. In addition, water level planning, breakwater reinforcements and evacuation routes should be reviewed in ports under tsunami hazard.

- **Climate Adaptive Infrastructure:** Adaptive structural measures such as drainage systems, elevated control centres, watertight power distribution systems should be implemented in port infrastructure against sea level rise and flood risk.

- **Backup Energy and Communication Systems:** Generators, battery-backed network systems and independent communication infrastructure play a vital role for operational continuity in times of disaster and crisis.

Administrative and Operational Measures

- **Effective and Up-to-date Implementation of the ISPS Code:** The International Ship and Port Facility Security Code (ISPS Code) forms the basis of the security framework for ports. However, this code needs to be updated and implemented to cover not only physical security but also new generation risks such as cyber security, disaster risks and insider threats.

- **Emergency and Crisis Management Plans:** Each port should have emergency action plans with drills prepared according to different scenarios such as earthquake, tsunami, storm, cyber attack. It is essential that these plans are regularly tested and supported by special training for personnel.

- **Climate Adaptation Strategies:** Most of the ports in Türkiye do not have climate adaptation strategies. "Climate change projections" should be integrated into port master plans and structural transformation projects should be implemented accordingly.

Steps Required at Organisational and National Scale

- **National Port Disaster and Security Resilience Programme:** A national monitoring and audit programme, including risk inventories of ports, should be established with the participation of the Ministry of Transport and Infrastructure, AFAD, Coast Guard Command and relevant sector representatives.

- **Insider Threat Policy:** As recommended by IMO, ports should establish specific procedures for insider threats, personnel background checks, access log monitoring and suspicious behaviour reporting mechanisms.

- **Implementation of Cyber Security Protocols:** In the face of increasing digitalisation, data integrity, access control, SCADA security, backup infrastructures and intrusion detection systems should be established in ports; national guidelines should be prepared based on NIST, IMO and ENISA standards.

- **Anti-Corruption and Transparency Policies:** A security culture based on the principle of openness and auditability should be established in port operations. Anonymous reporting systems, internal audit teams and independent security consultancy mechanisms should be supported.

Conclusion and Evaluation

Türkiye's ports have become an integral part of not only trade but also national security. Therefore, port security can no longer be limited to operational efficiency; rather, it should be addressed from a multidimensional perspective such as resilience to disaster risks, resistance to hybrid threats, digital security, corporate governance and compliance with international standards.

Türkiye should simultaneously develop policies to make its ports **resilient to climate change, disasters, cyber threats and organised crime**, while integrating them into **green and digital transformation** processes. This is a national priority that will directly affect not only the port sector but also Türkiye's foreign trade security, economic sustainability and strategic deterrence.

Expert Opinion: Av. Çiğdem TANKURT
Tankurt Law Office

SAFE AND SECURE PORTS AND LEGAL FRAMEWORK

Safe and secure ports play a critical role in the sustainability of maritime trade operations and the continuation of the supply chain. In this article, the concept of safe and secure ports and their legal basis will be discussed.

Safe and Secure Port Concept

Safe ports are ports where ships, cargo and crew can operate without any harm. A secure port, on the other hand, includes the measures taken to prevent illegal activities. These two elements are of great importance both commercially and legally. **Safe port doctrine** is a principle stating that the charterer should be careful in the choice of port in commercial shipping. The concept of **safe port**, on the other hand, was developed **at the end of the 20th century** and especially **after the 11 September 2001 attacks**, it was connected to international standards with the ISPS Code (2002).

Legal Framework

The safety of ports is ensured by various international and national regulations and the first international legal basis in this regard is **the SOLAS Convention on the Safety of Life at Sea.** According to SOLAS, ports and terminals are obliged to provide a safe environment for the loading, unloading and navigation of ships and therefore to ensure that the infrastructure, equipment and personnel in the port or terminal comply with certain safety standards. **The International Ship and Port Facility Security Code (ISPS Code)**, which entered into force on 1 July 2004 under SOLAS Chapter XI-2, is the basis of a comprehensive mandatory security regime for international maritime transport. The Code is divided into two parts, **Part A** and **Part B**. Mandatory Part A sets out the detailed maritime and port security requirements that States Parties to SOLAS, port authorities and ship operators must comply with in order to comply with the Code. Part B of the Code provides a set of recommendations on how to approach ensuring compliance with the provisions in Part A. The ISPS code also plays a role in standardising the **security of ports in cyberspace**. Other legal bases that contain regulations on port security are the Law No. 618 on Ports and the Law No. 4922 on the Protection of Life and Property at Sea.

Port security is a critical element for the sustainability of maritime transport. Compliance with legal regulations minimises risks and ensures the safety of commercial activities. It is also of great importance for environmental sustainability. Therefore, port operators should continuously review and improve their safety and environmental protection standards and comply with the legislation.

CHAPTER 5

AGENDA OF THE TURKISH SHIPPING SECTOR AND SOLUTION PROPOSALS

CHAPTER 5: AGENDA OF THE TURKISH SHIPPING SECTOR AND SOLUTION PROPOSALS

In this chapter, the current status of the Turkish port sector, the main problems it faces and the solution proposals are discussed in a comprehensive manner. Emphasising the critical role and strategic importance of ports in foreign trade, the regulations in the sector, infrastructure requirements, financial incentives, legislative deficiencies and sustainability issues are emphasised.

5.1. Incentives and Investment Needs of the Turkish Port Sector

Ports, which constitute the most important infrastructure of foreign trade, are also a vital part of the logistics chain. However, port investments have lost their attractiveness in our country. The main reasons for this are the lack of suitable locations for new port investments, the long investment process (legal permit approval period), high initial investment costs and maintenance investments, high operating costs (including the fees paid to the public), difficulties in obtaining investment financing and high return on investment period. In addition, ports have to make continuous investments due to intense commercial competition, changes in ship characteristics, developments in port-related technologies and changes in commercial trends. All these burdens on ports have made the port sector unsustainable. Existing incentives and investment supports are insufficient in terms of both new investments and compulsory investments required by existing ports. Despite this situation, with the regulation published in the Official Gazette dated 30 November 2022, only port investments of TL 3 billion or more to be made in industrial zones are included in the scope of strategic investments. This situation creates unfair competition in the sector.

Solution Proposals:

- Port investments should be included in the scope of strategic investments.
- Interest support and grant incentives should be expanded.
- Investors should be incentivised by increasing tax reductions.

- Port services should be recognised as “Service Exports” and benefit from additional incentives.

5.2. Expansion of Port Areas and Use Agreements

In Türkiye, dense construction and ownership problems in coastal areas make new port investments difficult. Ports often do not have land suitable for expansion and investments by sea filling method cannot be realised due to bureaucratic obstacles.

Most of the private ports operate on state land and are operated under utilisation contracts. However, revenue shares ranging from 1% to 15% of the annual rent collected from the leased treasury lands constitute a major burden for the investors.

In privatised ports, the duration of operating contracts is generally kept short, which makes new investments economically unattractive. In the time extensions of privatised ports where different revenue shares are taken, the revenue shares should be adjusted to encourage port investors to make investments.

Solution Proposals:
- Private harbour contracts should be extended to 49 years (the model applied for shipyards can be taken as an example).
- Revenue shares should be equalised and fixed at 1%.
- Regulations for areas to be expanded by sea filling should be relaxed.

5.3. Strengthening Railway and Logistics Connections of Ports

The vast majority of ports in Türkiye are road-dependent, and many ports do not have a railway connection. The lack of integration of ports with the hinterland increases logistics costs. Ports can only operate effectively and efficiently within a developed road and railway integration. Improving the connections of railways to ports, which are advantageous in terms of both transport cost and carbon emission compared to highways, should be one of the main targets of the transport sector.

In major port areas such as Iskenderun, Kocaeli, Gemlik and Aliağa, congestion is experienced due to road traffic, which prolongs transport times and reduces competitiveness.

Solution Proposals:
- Railway connections should be established to the ports.
- Road networks should be strengthened and uninterrupted access to ports should be ensured.
- Industrial and logistics zones and port planning should be integrated.

5.4. Lack of Port Management Model and Legislative Problems in Türkiye

Many countries in the world use the “Port Authority” model for port management. In Türkiye, most of the ports are operated by the private sector, therefore there is no regional port management. The port authority, which will contribute to the ports to produce more flexible and faster solutions, should be realised in a short time. Permission and approval processes for port investments are long and complex. It takes 3-4 years on average to complete a port investment. Reducing the bureaucracy in port investments and simplifying the legislation will benefit the improvement of the investment environment.

Solution Proposals:
- A Port Management Model specific to Türkiye should be developed.
- All authorisation and approval processes should be carried out by a single ministry.
- Coordination in the sector should be increased by establishing regional port authorities.

5.5. Green Transformation and Renewable Energy Use

For green transformation and reduction of carbon emissions, ports should turn to renewable energy sources.

However, there is not enough roof space for ports to install solar power plants (SPP). Different practices are applied to licensed and unlicensed producers in the allocation of forest lands for wind power plant (WPP) investments, which makes it difficult for ports to make investments.

Solution Proposals:

- Renewable energy incentives should be provided to ports.
- Equal rights should be granted for licensed and unlicensed WPP investments in forest lands.
- Cold-Ironing (On Shore Power Supply) system investments, which enable ships docking at ports to switch off their own engines and benefit from port electricity, should be supported by the state.

In conclusion, the Turkish port sector is in an important transformation process due to the growing foreign trade volume and increasing global competition. However, insufficient incentives, bureaucratic obstacles and infrastructure deficiencies prevent the sector from fully utilising its potential.

The following measures should be taken to overcome these problems:

✓Port investments should be included in the scope of strategic investments.
✓For private ports, utilisation contracts should be extended and investment incentives should be increased.
✓Railway connections of ports should be strengthened.
✓A Port Management Model specific to Türkiye should be established.
✓Incentives for ports should be increased for green transformation.

Implementation of these recommendations will make the Turkish port sector more competitive, sustainable and investment friendly.

OUR MEMBERS

AKÇANSA AMBARLI PORT

Port Features	
Administrator	Akçansa Çimento San. ve Tic. A.Ş.
Coordinates	40º 58′ N - 28º 41′ E
Handled Cargo	Bulk Cargo, General Cargo, Liquid Cargo, Container, Ro-Ro
Handling Capacity	3.000.000 ton & 60.000 TEU & 150.000 qua.
Warehouse Area	50.205 m²
Customs Area	4.612 m²
Bounded Area	41.650 m²
Non-Bounded Area	48.100 m²
Total Area	89.750 m²

Berth-Pier Dimensions	
Length	930 m
Maximum Draft	13,0 m
Ro-Ro Ramp	2 qua.

Equipment List	Number	Capacity / Ton
Sennebogen 835	2	8
Sennebogen 870	1	12
Liebherr A934 C	1	8
Fantuzzi MHC 200	1	100
Gotwald HMK 260	1	80
Liebherr LHM 320	1	100

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AKÇANSA ÇANAKKALE PORT

Port Features	
Administrator	Akçansa Çimento San. ve Tic. A.Ş.
Coordinates	39º 52′ 48″ N - 26º 09′ 15″ E
Handled Cargo	Bulk Cargo, General Cargo
Handling Capacity (Ton/year)	4.500.000
Warehouse Area	10.000 m²
Customs Area	47.000 m²
Open Area	37.196 m²

Berth-Pier Dimensions	
Length	895 m
Maximum Draft	13.5 m

Equipment List	Number	Capacity / Ton
Sennebogen	1	10
Sennebogen	1	10
Siwertell Ship Loader	1	800 tph
PH Ship Loader	1	500 tph

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AKSA ACRYLIC CHEMICAL INDUSTRY INC.

AKSA
Akrilik Kimya Sanayii A.Ş

Port Features	
Administrator	Aksa Acrylic Chemical Industry Co. Ltd.
Coordinates	40º 41′ 10“ N - 29º 24′ 30“ E
Handled Cargo	Liquid Bulk, General Cargo
Handling Capacity	Liquid Cargo
- Liquid Cargo (Ton/year)	350.000
- General Cargo (Ton/year)	600.000
Total Port Area	21.500 m²
Parking Area	-
Equipment Parking Area	-

Berth-Pier Dimensions	
Liquid Berthing Length	36 m
Genaral Berthing Length	175 m
Maximum Draft	8,5 m

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AK-TAŞ TERMINAL

Port Features	
Administrator	Ak-Taş Dış Ticaret A.Ş.
Coordinates	º29 - 51 N - º40 - 42 E
Handled Cargo	Liquid Bulk
Handling Capacity	
- Liquid Cargo (Ton/year)	100.000
Total Port Area	7.900 m²
Closed Warehouse	38.000 m³

Berth-Pier Dimensions	
Length	90 m
Maximum Draft	8 m

Equipment List	Number	Capacity / Ton
Forklift	2	3

Contact Details	
Related Persons	Dinçer Demirel
Address	Plaj Yolu Mevkii - İZMİT
Telephone	+90 262 239 51 42
Fax	+90 262 229 46 24
E-mail	dincer.demirel@aktasdis.com
Web Site	www.aktasdis.com

ALTAŞ AMBARLI PORT COMPLEX

Port Features	
Administrator	Altaş Ambarlı Port Facilities Trade Co. Inc.
Coordinates	40º 58′ N & 28º 41’ E
Ports	Kumport
	Akçansa
	Mardaş
	Marport
Handled Cargo	Container, General Cargo, Bulk Cargo
Total Port Area	1.760.000 m²

Berth-Pier Dimensions	
Length	6.150 m
Minimum Depth	7 m
Maximum Draft	17 m

Contact Details	
Related Persons	Gürdal Karadeniz
Address	Marmara Mah. Liman Cad. No:49 İç Kapı No:96
	34524 Beylikdüzü - İSTANBUL
Telephone	+90 212 875 28 00 – +90 212 875 28 01
Fax	+90 212 875 28 02
E-mail	info@altasliman.com
Web Site	www.altasliman.com

ALTINTEL PORT AND TERMINAL

Port Features	
Administrator	Altıntel Liman ve Terminal İşletmeleri A.Ş.
Coordinates	40º 46" 06' N - 29º 32" 438' E
Handled Cargo	Liquid Bulk
Handling Capacity	
- Liquid Bulk (Ton/year)	1.000.000
Total Port Area	8.689 m²
Customs Warehouse (open)	8.689 m²
Customs Warehouse (closed)	106.500 m³ - Storage tanks capacity

Berth-Pier Dimensions	
Length	237 m
Maximum Draft	13.5 m

Contact Details	
Related Persons	Kıvanç Boztepe
Address	Dilovası Organize Sanayi Bölgesi I.Kısım Tuna Cad. No: 12, Dilovası - KOCAELİ
Telephone	+90 262 648 23 00
Fax	+90 262 754 94 78
E-mail	altintel@altintel.com.tr
Web Site	www.altintel.com.tr

ANADOLUPORT

Port Features	
Administrator	Anadoluport Pendik Kumcular Liman İşletmeleri
Coordinates	40° 51' 14.39'' N - 29° 16' 3,36'' E
Handled Cargo	General Cargo, Dry Bulk Cargo, Ro-Ro
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	6.000.000
Vehicle/Year	50.000
Total Port Area	25.000 m²
Customs Area	25.000 m²

Berth-Pier Dimensions	Length	Maximum Draft
Pier (West)	202 m	11,5 m
Pier (East)	222 m	11,5 m
Berth	205 m	8,5 m
Ro-Ro Ramp - 1	Width 22 m	8,5 m
Ro-Ro Ramp - 2	Width 25 m	8,5 m
Ro-Ro Ramp - 3	Width 34 m	8,5 m

Equipment List	Number	Capacity / Ton
Port crane	4	8-100
Forklift	3	3-16
Loader	2	7
Mini Loader	3	1,5-20

Contact Details	
Related Persons	Nabi Erberk
Address	Malkoçoğlu Sok No;14 Güzelyalı Pendik - İSTANBUL
Telephone	+90 216 494 32 06
Fax	+90 216 494 62 31
E-mail	anadoluport@anadoluport.com.tr
Web Site	www.anadoluport.com.tr

PORT OF ASBAŞ - ANTALYA FREE ZONE

Port Features	
Administrator	ASBAŞ – Antalya Serbest Bölge Kurucu ve İşleticisi A.Ş.
Coordinates	36° 50′ 18″ N - 30° 36′ 20″ E
Handled Cargo	General Cargo, Bulk, Container
Handling Capacity (Ton/year)	1,500,000
Warehouse Area	-
Customs Area	-
Open Area	-
Total Port Area	25.750 m^2

Berth-Pier Dimensions	
Length	400 m
Maximum Draft	9,50 m

Contact Details	
Related Persons	Volkan Kurt
Address	Serbest Bölge Liman Mah. Liman Cad. No 44 Konyaaltı - ANTALYA
Telephone	+90 242 259 09 30
Fax	+90 242 259 09 32
E-mail	v.kurt@asbas.com.tr
Web Site	www.asbas.com.tr

ASSAN LİMAN İŞLETMELERİ A.Ş.

AssanPort

Port Features	
Operator	ASSAN Liman İşletmeleri A.Ş. (ASSAN PORT)
Coordinates	36° 41′ 06″ N - 36° 11′ 40″ E
Handled Cargo	Container, General Cargo, Project Cargo
Handling Capacity	
- Container (TEU/year)	350.000
- General Cargo (Ton/year)	1.000.000
Total Port Area	134.065 m^2
Car-Truck Parking Area	2.240 m^2

Dock - Pier Features	
Length	2 x 336 m + 30 m Dolphin
Maximum Draft	15,0 m

Equipment List	
	2 x MHC - HMK 7608 (150 Tonnes)
	2 x MHC - HMK 6407 (100 Tonnes)
	1 x MHC - ESP.8 (125 Tonnes)
	11 x Full Container Handler (Stacker)
	2 x Empty Container Handler (Stacker)

Contact Details	
Related Persons	Cem Kuvas
Address	Organize Sanayi Bölgesi Sarıseki, İskenderun - HATAY
Telephone	+90 326 629 40 00
Fax	+90 326 629 40 44
E-mail	info@assanport.com
Web Site	www.assanport.com

ASYAPORT

Port Features

Administrator	Asyaport Liman A.Ş.
Coordinates	40° 54′ 00″ N - 27° 28′ 00″ E
Handled Cargo	Container, General Cargo, Bulk Cargo, Ro-Ro
Handling Capacity	
Container (TEU/Year)	2.500.000
Total Port Area	300.000 m²
Land Terminal	210.000 m²

Berth-Pier Dimensions

Length	2.010 m
Maximum Draft	18 m

Equipment List	Number
STS	11
SCR	4
RTG	30
TT	75
RST	4
ECH	5

Contact Details

Related Persons	Besim Dönmez
Address	Barbaros Mah. Bülent Ecevit Cad. No:407 Süleymanpaşa 59020 - TEKİRDAĞ
Telephone	+90 282 273 ASYA (2792)
Fax	+90 282 273 19 29
E-mail	bdonmez@asyaport.com
Web Site	www.asyaport.com

ATAKAŞ PORT

Port Features	
Administrator	Atakaş Liman İşletmeciliği ve Tic. A.Ş.
Coordinates	36° 41′ 57″ N - 36° 11′ 03″ E
Handled Cargo	Container, General Cargo, Dry Bulk Cargo, Project Cargo
Handling Capacity	
- Container (TEU/year)	-
- General Cargo (Ton/year)	2.000.000
- Bulk Cargo (Ton/year)	8.000.000

Total Port Area	Open Area	Warehouse
- Customs Area	168.520 m²	2.200 m²
- Dury free Area	10.000 m²	22.500 m²

Berth-Pier Dimensions		Length (m)	With (m)	Max. Draft (m)
	Pier	716	35	min. 9, max. 27

Equipment List	Remarks	Number	Capacity / Ton
Crane	Gottwald HMK 7608	2	140
	Gottwald HSK 7528	2	125
	Sennebogen 895 EQ	1	60
	Sennebogen 880 EQ	3	40
Other Equipment	Excavator	6	22-32
	Loader	11	11-25
	Stacker	3	46
	Forklift	14	3-32

Railway (iltisak hattı)	Metre	Line
	1.500 m	3 line

Contact Details	
Related Persons	Özcan Toluk
Address	Azganlık Mah.21.Sok. No: 9 (İsk.2.OSB) İskenderun - HATAY
Telephone	+90 326 656 35 35 Pbx
Fax	+90 326 656 32 43
E-mail	ozcan.toluk@atakasliman.com.tr
Web Site	www.atakas.com.tr

AUTOPORT TERMINAL OPERATORS S.A.

AUTOPORT TERMINAL OPERATORS S.A

Port Features	
Administrator	Autoport Terminal Operators S.A.
Coordinates	40º 43′ 22″ N - 029º 52′ 39 E
Handled Cargo	Ro-Ro, General Cargo, Container
Handling Capacity	
- Ro-Ro (Vehicle/Year)	650.000
- General Cargo (Ton/Year)	2.000.000
Total Port Area	**243.351 m²**
Temporary Storage Area Open Field	164.083 m²
Temporary Storage Area Closed Field	6.020 m²
Free Storage Area Open Field	62.362 m²
Customs Bonded Warehouse Open Field	5.486 m²
Customs Bonded Warehouse Closed Field	5.400 m²
Total Outside Open Stock Field	**63.000 m²**
Satellite Terminal A Open Stock Field	33.000 m²
Satellite Terminal B Open Stock Field	30.000 m²

Berth-Pier Dimensions	
Length	Berth 1 - 303 m / Berth 2 - 328 m
Berth 1/Berth 2 Maximum Draft	10,00 m/12,00 m (Considering 200m LOA vessel)

Equipment List	Number	Capacity / Ton
MHC	2	80
Crane	1	80
Sennebogen	1	7
RMG	1	10
Forklift	6	16 / 12 / 8
Terminal Tractor	2	100 / 150

Contact Details	
Related Persons	Bilgin İşler
Address	Sepetlipınar Mahallesi Arpalık Caddesi No:100 41275 Başiskele - KOCAELİ
Telephone	+90 262 315 38 00
Fax	+90 262 315 38 70
E-mail	autoport@autoport.com.tr - bilgin.isler@autoport.com.tr
Web Site	www.autoport.com.tr

AVES İÇ ve DIŞ TİC. A.Ş.

Port Features	
Administrator	Savka Platform ve Boru Hatları A.Ş.
Coordinates	36° 46’ 07’’ N - 034° 43’ 49’’ E
Handled Cargo	Clean Petroleum Products, Vegetable Oil
Handling Capacity	
- Liquid Bulk (Ton/year)	2.500.000

Berth-Pier Dimensions	East Berth	West Berth
Length	282 m	282 m
Maximum Draft	12 m	12 m

Contact Details	
Related Persons	Capt. Halime Tunç Ekinci / İsmail Hakkı Tas
Address	Kazanlı Mh. 32960 Sk. Aves Mersin Doğu Terminali PK: 33281 Akdeniz - MERSİN
Telephone	+90 324 241 58 50 - +90 324 451 30 21
Fax	+90 324 241 58 60 - +90 324 451 30 22
E-mail	h.tuncekinci@savka.com.tr - h.tas@avesas.com.tr
Web Site	www.savka.com.tr | www.aves.com.tr

BATILİMAN LİMAN İŞLETMELERİ A.Ş.

BATILİMAN

Port Features	
Administrator	Batıliman Liman İşletmeleri A.Ş.
Coordinates	38° 45' 00" N - 26° 53' 50" E
Handled Cargo	General Cargo, Bulk Cargo, Project Cargo, Dangerous Goods
Handling Capacity (Ton/year)	6.000.000 (Total)
Total Port Area	238.450 m²
Customs Warehouse (closed)	26.630 m²
Customs Warehouse (open)	31.300 m²
Open Area (customs-free)	75.000 m²
Temporary Storage Area	20.000 m²

Berth-Pier Dimensions	Pier 1	Pier 2	Pier 3	Berth 1
Length (m)	214	390	381	178
Minimum Draft (-m)	12	17	12	3
Maximum Draft (-m)	17	34	34	10

Equipment List	Number	Capacity / Ton
Liebherr LHM 250 MHC	1	64
Liebherr LHM 180 MHC	1	64
Liebherr LHM 150 MHC	2	40
Sennebogen 850 MHC	1	15

Contact Details	
Related Persons	Nuri Demiray
Address	Nemrut Körfezi, No:13, Çakmaklı Köyü, Aliağa - İZMİR
Telephone	+90 232 625 54 45 - 46
Fax	+90 232 625 54 53
E-mail	info@batiliman.com.tr
Web Site	www.batiliman.com.tr

BELDEPORT

Port Features	
Administrator	MED Lojistik A.Ş.
Coordinates	40° 46' 18'' N - 029° 30' 55' E
Handled Cargo	Container, General Cargo, Bulk Cargo, Project Cargo, Ro-Ro, Liqud Bulk
Handling Capacity (Phase IA)	
- Container (TEU/Year)	550.000
- General and Bulk Cargo (Ton/year)	2.000.000
- Liquid Load (Ton/year)	140.000 cbm / Instant - 1.500.000
- Vehicle (PCC)/year	200.000 units
Total Port Area	**600.000 m² (After all investment phase completed 1.000.000 m²)**
Bonded Storage Area (open)	149.000 m²
Unbonded Storage Area (open)	112.000 m²
TIR Parking Area	12.000 m²
Warehouse	1.100 m²

Berth-Pier Dimensions	
Length	450 m (1,384 m, when all phases are completed)
Draft (uniform)	16,5 m (18 m, further phases)

Equipment List	Number	Capacity
Liebherr LHM 550	2	144 Tons
Liebherr LHM 500	1	103 Tons
Konecranes CRS	3	45 Tons
Sanny CRS	2	45 Tons
Konecranes ECH	1	11 Tons
Sanny ECH	1	9 Tons
Terberg YTT	10	168 kW (225 Hp) at 1800 rpm
Seyit Usta Trailer	10	65 Tons
Forklift	9	3-33 ton capacity
Bromma Twin-Lift Automatic Spreader	4	
Bromma Automatic Overheight Frame	2	
SMAG Clamshell Buckets (30m3)	2	
Reefer Rack	2	190 plugs
SSG	4	Ordered (25 Rows)
RTG	13	Ordered

Contact Details	
Contact Persons	Captain Uğur Kılıç, Port Operations Manager Zeynep Şahin Taşkın, Sales and Marketing Manager
Address	Diliskelesi Mah. Liman Cad. No:13/8 41455, Dilovası - KOCAELİ
Telephone	+90 262 677 74 00
Fax	+90 262 677 74 01
E-mail	ugur.kilic@beldeport.com.tr - zeynep.taskin@beldeport.com.tr
Web Site	www.beldeport.com.tr

BODRUM CRUISE PORT

Port Features

Administrator	Bodrum Yolcu Limanı İşletmeleri A.Ş.
Coordinates	37º 01″ 30′ N - 27º 26″ 13′ E
Handled Cargo	Passenger
Total Port Area	21.856,32 m²
Closed Warehouse	-
Customs Area (open)	2,081 m²
Parking Area	3,470 m²

Berth-Pier Dimensions

Length	Berth No 1: 350 m Berth No 2: 330 m
Maximum Draft	9 m (Max depth 25 m)

Contact Details

Related Persons	Aziz Güngör Global Ports Holding, East Med Regional Director Erkan Öztunalı Port Manager
Address	Bodrum Cruise Port - Kumbahçe Mh. İskele Cad. No:13 Bodrum - MUĞLA
Telephone	+90 252 316 48 72
Fax	+90 252 316 18 72
E-mail	info@bodrumcruiseport.com
Web Site	www.bodrumcruiseport.com

BORUSAN PORT

BORUSAN PORT

Port Features	
Administrator	Borusan Lojistik Dağıtım Depolama Taşımacılık ve Tic. A.Ş
Coordinates	40º 25′ 12″ N - 29º 05′ 18″ E
Handled Cargo	General Cargo, Project Cargo, Container, Vehicle Handling (Ro-Ro)
Handling Capacity	
- Container (TEU/year)	450.000
- General Cargo (Ton/ year)	5.000.000
- Ro-Ro (Vehicle/ year)	350.000
- Total port area	520.000 m²
- Closed Warehouse	25.000 m²
- Customs Warehouse (open)	360.000 m²
Truck parking area (Pregate)	17.000 m²

Berth-Pier Dimensions	
Length	1.930 m
Maximum Draft	14,5 m

Equipment List	Number	Capacity / Ton
MHC	8	40-150
RTG	8	41
Stacker	3	45
Stacker	3	10
Stacker	2	46
SSG	3	60 (under spreader)
Overhead Bridge Crane	12	20-35
Forklift	21	3-33
Terminal Tractor	30	80-120
Reefer Plug	224	-

Contact Details	
Related Persons	Rabia Çavuşoğlu
Address	Ata Mahallesi 125 Nolu Sok. No:3 16601 Gemlik – BURSA
Telephone / Fax	+90 224 270 13 00 - +90 224 519 01 53
E-mail	rabia.cavusoglu@borusan.com - limansatis@borusan.com
Web Site	www.borusanport.com

PORT OF ÇANAKKALE

Port Features	
Administrator	Çanakkale Liman İşletmesi San. ve Tic. A.Ş.
Coordinates	40° 06′ 21″ N - 26° 22′ 41″ E
Handled Cargo	Bulk Cargo, General Cargo, Ro-Ro, Container, Fuel Products Passenger, Ferry, Liquid Cargo
Handling Capacity	
- Bulk-General Cargo (Ton/ year)	1.000.000
- Liquid Bulk (Ton/year)	150.000
- Container (TEU/year)	100.000
- General Cargo (Ton/ year)	
- Ro-Ro (Vehicle/year)	
Total Port Area	74.463 m²
Closed Warehouse	2.688 m²
Customs Warehouse (open)	28.746 m²
Parking Area	

Berth-Pier Dimensions	
Widht	24 mt
Length	214 m
Maximum Draft	14-28 m

Equipment List	Number	Capacity
Gottwald HMK 280E MHC	2	100 ton Capacity
Sennebogen 835 Mobil Crane	4	12 ton Capacity
Radio Frequency Grabbing	4	12 m³ Capacity
Bulk Cargo Bunker	4	8 ton Capacity
Forklift	3	2 qty. 5 ton ve 1 qty. 3 ton
Wheel Loader	1	
Bobcat Brand Mini Loader	1	

Contact Details	
Related Persons	Berkan Özkan
Address	Cumhuriyet Mahallesi Sahil Yolu Cad. No. 42 17110 KEPEZ - ÇANAKKALE
Telephone	+90 286 263 55 00
Fax	+90 286 263 08 08
E-mail	liman@portofcanakkale.com - info@portofcanakkale.com
Web Site	www.portofcanakkale.com

ÇELEBİ PORT OF BANDIRMA

Port Features	
Administrator	Çelebi Bandırma Uluslararası Limanı İşletmeciliği A.Ş.
Coordinates	40º 21′ 45″ N - 27º 57′ 50″ E
Handled Cargo	Bulk Cargo, General Cargo, Liquid Bulk, Ro-Ro, Container, Project Cargo, Car, Livestock
Handling Capacity	
- Container (TEU/year)	188.000
- Bulk and General Cargo (Ton/ year)	11.951.000
- Liquid Bulk (Ton/ year)	4.320.000
- Ro-Ro (Vehicle/ year)	569.159
Total port area (Customs)	268.348 m^2
Warehouse	12.250 m^2
Vertical Silo	84.000 m^3
Parking Area	42.000 m^2

Berth-Pier Dimensions	
Length	2.974 m
Maximum Draft	12 m

Equipment List	Number	Capacity / Ton
Conecranes Gotwald	2	125
Reggiane MHC 200	1	100
Gottwald HMK 170	1	63
Liebherr LHM 400	1	104
Sennebogen 880 EQ	1	30
Sennebogen 835 R Special	1	13
Sennebogen 835 M Special	2	13
Sennebogen 870 R Special	1	16
Sennebogen 870 E Hybrid	2	16

Contact Details	
Related Persons	Gürkan Bayır - Fatih Uzunçakır
Address	Paşabayır Mah. Liman Sahası Sk. No:6/3 10200, Bandırma - BALIKESİR
Telephone	+90 266 714 04 04
Fax	+90 266 713 79 79
E-mail	gurkan.bayir@celebi.com.tr - fatih.uzuncakir@celebi.com.tr
Web Site	www.portofbandirma.com.tr

CEYPORT TAŞUCU

Port Features

Administrator	Ceyport Taşucu International Port Management Inc.
Coordinates	36° 18′ 30″ N - 33° 53′ 30″ E
Handled Cargo	Bulk Cargo (Solid/Liquid), General Cargo, Project Cargo, Container, Ro-Ro, Passenger, Livestock
Handling Capacity	
- Container (TEU/Year)	100.000
- General and Bulk Cargo (Ton/Year)	3.000.000
- Liquid Bulk Cargo (Ton/Year)	250.000
- Vehicle/Passenger	250.000 / 200.000
Total port area	453.752,00 m²
Closed Warehouse	63.000 m²
Silo (Ton)	-

Berth-Pier Dimensions

Length	1.190 m
Maximum Draft	11 m

Equipment List	Number	Capacity / Ton
Cranes	7	Max. 154 Ton

Contact Details

Related Persons	Rahman Çoban
Address	Taşucu Mah. Atatürk 8 Sk. No:4, Silifke - MERSİN
Telephone	+90 324 741 53 00
Fax	+90 324 741 53 73
E-mail	info@ceyporttasucu.com.tr
Web Site	www.ceyporttasucu.com.tr

CEYPORT TEKİRDAĞ

Port Features

Administrator	Ceyport Tekirdağ International Port Management Inc.
Coordinates	40° 57′ 52″ N - 27° 30′ 21″ E
Handled Cargo	Bulk Cargo (Solid/Liquid), General Cargo, Project Cargo, Container, Ro-Ro, Passenger, Train Ferry, Livestock
Handling Capacity	
- Container (TEU/Year)	450.000
General and Bulk Cargo (Ton/Year)	15.500.000
Liquid Bulk Cargo (Ton/Year)	1.150.000
Vehicle/Passenger	400.000/650.000
Total Port Area	261.552 m^2
Closed Warehouse	20 units / 24.601 m^2
Silo (Ton)	6 units / 30.000
Tank Terminal (m^3)	20 units / 69.750 m^3

Berth-Pier Dimensions

Length	2.930 m
Maximum Draft	12,00 m (10.50 m channel draft)

Equipment List	Number	Capacity / Ton
Cranes	15	11 – 154

Contact Details

Related Persons	Osman Kayalar
Address	Vatan mah. Barbaros Cad.No:9/1 Süleymanpaşa - TEKİRDAĞ
Telephone	+90 282 261 08 00
Fax	+90 282 261 23 46
E-mail	info@ceyporttekirdag.com.tr
Web Site	www.ceyporttekirdag.com.tr

ÇOLAKOĞLU METALURJİ A.Ş.

Port Features	
Administrator	Çolakoğlu Metalurji A.Ş.
Coordinates	40º 46′ N - 29º 31′ E
Handled Cargo	General Cargo, Bulk Cargo
Handling Capacity	
- General Cargo and Bulk Cargo (Ton/year)	7.000.000
Total Port Area	22.620 m^2

Berth-Pier Dimensions	Length (m)	Maximum Draft
Pier No.1	460	17-18 m
Pier No.2	270	9-18 m

Cranes	Number	Capacity	Remarks
Mobile Crane	3	5.000 ton/day	-

Contact Details	
Related Persons	Mesut Uğraş
Address	Dilovası Organize Sanayi Bölgesi, 1. Kısım Mahallesi - İZMİT
Telephone	+90 262 676 75 00
Fax	+90 262 754 84 20
E-mail	mugras@colakoglu.com.tr
Web Site	www.colakoglu.com.tr

DFDS PENDİK PORT

DFDS

Port Features

Administrator	DFDS Denizcilik ve Taşımacılık A.Ş.
Coordinates	40° 51′ 30″ N - 29° 16′ 19″ E
Handled Cargo	Ro-Ro
Total Port Area	117.500 m^2

Berth Dimensions

Length	210 m

Contact Details

Related Persons	Levent Şinel
Address	İstanbul Tersanesi Komutanlığı Yanı, Kemikli Dere Mevkii Güzelyalı 34903 Pendik - İSTANBUL
Telephone	+90 216 392 5050
Fax	+90 216 392 5051 / 2
E-mail	levent.sinel@dfds.com - lesin@dfds.com
Web Site	www.dfds.com.tr

DİLER DEMİR ÇELİK

DİLER DEMİR ÇELİK

Port Features	
Administrator	Diler Demir Çelik End. ve Tic. A.Ş.
Coordinates	40º 46″ 42′ N - 29º 36″ 00′ E
Handled Cargo	General Cargo, Bulk Cargo
Handling Capacity	
- Bulk Cargo (Ton/year)	6.000.000
- General Cargo (Ton/year)	6.000.000
Total Port Area	52.705 m²
Closed Warehouse	5.551 m²
Temporary Storage Area (closed)	1.637 m²
Temporary Storage Area (open)	30.893 m²
Parking area	2.500 m²

Berth-Pier Dimensions	
Length	965 m
Maximum Draft	11.5 m

Equipment List	Number / Capacity
LHM MHC	1 x 180 rubber tired 1 x150 rubber tired
Handling machine	9 x palletized
Forklift	1X3 ton, 2X5 ton, 4X5.5 ton, 3X10 ton

Contact Details	
Related Persons	Bülent Yalabaçoğlu
Address	Hacı Akif Mah. Tayyar Yıldırım Cad. No :26 PK.39 Hereke Körfez - KOCAELİ
Telephone	+90 262 511 44 49
Fax	+90 262 511 32 22 – +90 262 754 61 17
E-mail	dilerliman@dilerhld.com
Web Site	www.dilerhld.com

DP WORLD EVYAP

DP WORLD EVYAP

Port Features	
Coordinates	Yarımca: 40º 45′ N - 29º 44′ E / Körfez: 40º 46‘ 15″ N - 029º 42‘ 24″ E
Handled Cargo	Container, General Cargo, Project Cargo, Liquid Cargo, Vehicle (Ro-Ro)
Handling Capacity	
- Container (TEU/year)	Yarımca: 1.150.000 – Körfez: 500.000
- Liquid Cargo(Tonnes/year)	Körfez: 1.000.000

Total Port Area (Yarımca)	452.000 m^2
CFS & Muayene Sahası	24.000 m^2
Partial Warehouse	4.000 m^2

Berth Dimensions (Yarımca)	**Berth 1**	**Berth 2**
Length	457 m	465 m
Maximum Draft	16 m	16 m

Equipment List (Yarımca)	**Number**
STS	8 (Remote Control)
E-RTG	24 (Remote Control)
TT	58

Berth-Pier Dimensions (Körfez)	**Berth 1**	**Pier 2**	**Pier 3**	**Berth 4**	**Berth 5-6**
Length	35 m	358 m	358 m	80 m	455 m
Maximum Draft	18.5 m	18.5 m	18.5 m	18.5 m	18.5 m

Körfez Total Area	279.000 m^2
Customised Open Area	243.000 m^2
Customs Closed Area	2.000 m^2
Open Duty Free Area	14.000 m^2
Car-Truck Parking Area	20.000 m^2

-

Equipment List (Körfez)	**Number**
SSG	1
MHC	2
MHC	3
RTG	26

Contact Details	
Related Persons	CCO Gökhan Yurteken
Address	Mimar Sinan Mah. Mehmet Akif Ersoy Cad. No:168, 41780 Yarımca, Körfez - KOCAELİ
Telephone	+90 262 316 11 00
Fax	+90 262 316 11 29
E-mail	gokhan.yurteken@dpworld.com
Web Site	www.dpworld.com/en/turkiye

EFESANPORT

Port Features	
Administrator	Efesan Demir Sanayi ve Ticaret A.Ş.
Coordinates	40° 46`N - 29° 32`E
Handled Cargo	Bulk Cargo, General Cargo, Asphalt, Ro-Ro
Handling Capacity	
- General Cargo (Ton/year)	2.000.000
- Bulk Cargo (Ton/year)	500.000
- Asphalt (Ton/year)	150.000
- Ro-Ro (Auto) (Vehicle/year)	300.000
- Ro-Ro (Track) (Vehicle/year)	15.000
Total Port Area	148.200 m^2
Parking Area	116.000 m^2 (Multi-Storey Car Parking Area Included)
Dry Bulk Cargo GDA	20.000 m^2

Berth-Pier Dimensions	
Total Berth Length	870 m
Maximum Draft	25 m

Cranes	Number	Brand	Capacity
	1	Fuchs F120 MH	22 mton
	3	Terex Fuchs 880XL	16 mton
	1	Liebherr LHM 180	64 mton
	1	Sennebogen 3300	45 mton
	1	Sennebogen 850	14 mton
	1	Gottwald HMK 300E	104 mton

Contact Details	
Related Persons	İlker Tuncer
Address	Dilovası OSB, 1.Kısım D-1006 Sok. No: 8 Dilovası - KOCAELİ
Telephone	+90 262 754 84 61/62/63
Fax	+90 262 754 51 55
E-mail	ilker.tuncer@efesan.com.tr
Web Site	www.efesanport.com

EGE GÜBRE TERMINAL

EGE GÜBRE SANAYİİ A.Ş.

Port Features	
Administrator	Ege Gübre Sanayi A.Ş.
Coordinates	38º 45′ 65″ N - 026º 55′ 68″ E
Handled Cargo	Container, General Cargo, Bulk Cargo, Liquid Bulk, IMDG Cargo
Handling Capacity	
- Container (TEU/year)	1.000.000
- General Cargo (Ton/year)	2.500.000
- Bulk Cargo (Ton/year)	5.000.000
Total port area	485.000 m²
Custom Warehouse	4.615 m²
Warehouse	37.415 m²
Custom Area	350.000 m²
Parking Area	25.000 m²

Berth-Pier Dimensions		
Length	EAST JETTY: 517m x 30m	WEST JETTY: 467m x 40m
Maximum Draft	32 m	32 m

Equipment List	Quantity	Total Capacity (T)
STS (Single Boom)	1	75
STS (Double Boom)	2	140
MHC	2	160
LHM	3	228
Sennebogen 870EQ	1	30
RTG	12	480
STACKER	6	270
ECH	5	36
TERMİNAL TRAILER	36	60 (each)

Contact Details	
Related Persons	Bülent Çiçek
Address	25. Cadde No:2 Çakmaklı, Aliağa - İZMİR
Telephone	+90 232 625 1250
Fax	+90 232 625 1245
E-mail	bulent.cicek@egegubre.com.tr
Web Site	www.egegubre.com.tr

EKİNCİLER - ORHAN EKİNCİ İSKELESİ

Port Features	
Administrator	EKMAR Denizcilik ve Gemi Acenteliği A.Ş.
Coordinates	36° 41′ 030″ N - 36° 11′ 46″ E
Handled Cargo	Dry Bulk, General Cargo
Handling Capacity	
- Dry Bulk Cargo(Ton/yıl)	5.000.000
- General Cargo (Ton/yıl)	1.000.000
Open Stock Area	50.000 m²
Custom Bounded Area	32.000 m²
Total Enclosed St. Area	20.000 m²
Railway Connection	Railway line – 40 wagon capacity

Berth-Pier Dimensions	
Length	2 x 430 m
Maximum Draft	12 m - 19 m

Equipment List	
	3 x Sennebogen 880
	2 x Sennebogen 870
	2 x Sennebogen 835
	1 x Sennebogen 6180

Contact Details	
Related Persons	Cpt. Vahtettin Erişen – Cpt. Bahri Çardak
Address	Organize Sanayi Bölgesi PK 240 Sarıseki, İskenderun - HATAY
Telephone	+90 326 656 22 31
Fax	+90 326 656 22 30
E-mail	verisen@ekmar.com.tr - bcardak@ekmar.com.tr
Web Site	www.ekinciler.com

EMBA HUNUTLU THERMAL POWER PLANT PORT

emba
ELEKTRİK ÜRETİM ANONİM ŞİRKETİ

Port Features	
Administrator	EMBA Elektrik Üretim A.Ş.
Coordinates	N: 4076052.5748 - E: 487319.1190
Handled Cargo	Coal
Handling Capacity	
- Solid Bulk (Ton/year)	3.500.000
Total Port Area	26.420 m²
Closed Warehouse	3 x 90.000 ton

Berth-Pier Dimensions	
Length	343 m
Maximum Draft	21 m

Equipment List	Number	Capacity / Ton
CSU	2	1.250 ton/hour

Contact Details	
Related Persons	Tamer Kırgıl
Address	Akyuva Mah. Kümeevler Mevkii No:1 Yumurtalık - ADANA
Telephone	+90 212 269 96 69
Fax	+90 212 269 96 09
E-mail	tamerkirgil@embapower.com
Web Site	www.embapower.com

ERDEMİR PORT

Port Features	
Administrator	Ereğli Demir ve Çelik Fab. T.A.Ş.
Coordinates	41º 16′ N - 31º 15′ E
Handled Cargo	General Cargo, Bulk Cargo, Liquid Bulk, Ro-Ro
Handling Capacity	
- Bulk Cargo (Ton/year)	13.750.000
- General Cargo (Ton/year)	6.250.000
Total Port Area	750.000 m²
Closed Warehouse	3.000 m²
Bonded Warehouse (A type)	139.000 m²

Berth-Pier Dimensions	
Length	1.670 m (Excluding Ro-Ro and Train Ferry berths)
Maximum Draft	20 m

Equipment List	Number	Brand	Capacity
BBulk Cargo crane	4	Caillard-Kawaden	30-31 Ton
General Cargo crane	5	Caillard- Siemag- MŞM	40-25-15 Ton
MHC	1	Liebherr	40 Ton
Forklift	9	Konecrane-Doosan	3-10-16-20-32-42 Ton
Loader	5	Doosan-Liu Gong	0,4-3-4 m3
Excavator	1	Liebherr	1,8 m3
Tele Handler	1	Caterpilar	14 m
Palletized Excavator	5	Doosan- Caterpilar	0,8-1,3-1,5 m³
Tanker	1	Ford	7 m³
Pilot Boat	2	Erdemir Pilot 1, Med Pilot 3	2x600 bg, 2x640 bg
Moorings	1	M.Boat 26	2x500 bg
Towages	4	Med XXXII, Med XXXIII, Med XLIX, Med XXVII	32, 32, 36, 61 Ton

Contact Details	
Related Persons	Caner Özleyen
Address	Ereğli Demir ve Çelik Fab. T.A.Ş. Liman Müdürlüğü Uzunkum No:7 P.K.:67330 Kdz. Ereğli - ZONGULDAK
Telephone	+90 372 329 35 92
Fax	+90 372 333 15 05
E-mail	cozleyen@erdemir.com.tr - erdemirport@erdemir.com.tr
Web Site	www.erdemir.com.tr

EREN ENERJİ ELEKTRİK ÜRETİM A.Ş.

eren ENERJİ

Port Features	
Administrator	Eren Enerli Elektrik Üretim A.Ş.
Coordinates	31° 37′ 51″ N - 41° 23′ 30″ E
Handled Cargo	Dry Bulk Cargo, General Cargo, Project Cargo, Ro-Ro, Container
Handling Capacity	
- Total Bulk and General Cargo (Ton/year)	15.000.000
- Container (TEU/year)	200.000
Total Port Area	1.096.984 m²
Custom Bonded Area	231.000 m²
Closed Warehouse	7.700 m²
Container Storage Area	2.000 TEU – 32.620 m²

Berth-Pier Dimensions	Berth 1	Berth 2	Berth 3	Berth 4
Length	300 m	250 m	260 m	240 m
Maximum Draft	20 m	15 m	15,5 m	14 m

Equipment List	Number	Capacity
Liebherr LPS 600 Mobile Harbour Crane	2	1500 Ton/h
Liebherr LPS 420 Mobile Harbour Crane	2	1000 Ton/h
Liebherr LPS 400 Mobile Harbour Crane	2	750 Ton/h
Liebherr LHM 550 Mobile Harbour Crane	2	20 TEU /h
Cat 966GC Loader	4	5,5 m³
Cat 950H Loader	1	4 m³
Liebherr L566XP	2	5 m³
Liebherr T33-10S Thelehandler	1	
Cat 236 Miniloader	1	
Hidromek HMK 102	1	
Hitachi ZX210H	3	
CAT 330GC	2	
Terberg Terminal Tractor (RT283-YT223)	8	
Konecranes Liftace 4532 TCE5	3	
Konecranes SMV 5/6 ECC 90	1	

Contact Details	
Related Persons	Ömer Buğer, Türker Özpoyraz
Address	Head Office: Ataşehir Bulvarı, Metropol İstanbul, İSTANBUL Port: Eren Limanı Muslu - ZONGULDAK
Telephone / Fax	+90 216 606 37 37 - +90 372 264 31 99
E-mail	omer.buger@erenholding.com.tr turker.ozpoyraz@erenholding.com.tr
Web Site	www.erenport.com.tr - www.erenlimani.com.tr

FORD OTOSAN YENİKÖY PIER

Port Features	
Administrator	Ford Otomotiv Sanayi A.Ş.
Coordinates	40’ 43’ N - 0’ 29’ 51’ E
Handled Cargo	Auto
Handling Capacity	
- Auto (Vehicle/Year)	400.000
Total Port Area	317.200 m²
Customs Area (open)	26.384 m²
Parking Area	290.816 m²

Berth-Pier Dimensions	
Length	132 m
Maximum Draft	21 m

Contact Details	
Related Persons	Fatih Kılınç
Address	Denizevler Mah. Ali Uçar Cad. Gölcük - KOCAELİ
Telephone	+90 262 315 52 24
Fax	+90 262 315 54 02
E-mail	fkilinc1@ford.com.tr
Web Site	www.ford.com.tr

GEMPORT

gemport
Gemlik Liman ve Depolama İşletmeleri A.Ş.

Port Features	
Administrator	GEMPORT Gemlik Liman ve Depolama İşletmeleri A.Ş.
Coordinates	40º 24′59.28 N - 29º 6’40.13 E
Handled Cargo	Container, Vehicle (Ro-Ro), General Cargo, Bulk Cargo, Project Cargo, Liquid Cargo, Trailer (Ro-Ro)
Handling Capacity	
- Container (TEU/ year)	2.000.000
- General Cargo (Ton/ year)	10.000.000
- Liquid Cargo	500.000
- Ro-Ro (Vehicle/year)	800.000
- Ro-Ro (Trailer/year)	200.000
Total port area	1.250.000 m^2
Bonded Area	564.400 m^2
Closed Bonded Area	6.000 m^2
Closed Bonded Warehouse	8.000 m^2
Customs Warehouse (closed)	8.077 m^2
Closed Car Parking area	60.000 m^2
Unbonded area	304.000 m^2 (2.000 m^2 semi-enclosed 20.000 m^2 semi-enclosed area for mining area) 280.000 m^2 (other port areas)
Berth Capacity	24.000TEU’s Vessel

Berth-Pier Dimensions	
Length	2.050 m
Maximum Draft	36 m

Equipment List	Number	Capacity / Ton
STS	8	70
MHC	4	80-104
Reach Stacker	7	45
Empty Handler	5	8
RTG	26	41
TT	48	60
FL	7	3-16

Contact Details	
Related Persons	Serhan Çilengir, Ali Ekber Şimşek
Address	Ata Mah. Liman Cad. No:12 16600 Gemlik - BURSA
Telephone / Fax	+90 224 524 7720
E-mail	serhan.cilengir@aryholding.com aliekber.simsek@aryholding.com

GİRESUNPORT

Port Features	
Administrator	Giresunport Liman İşletmeciliği A.Ş.
Coordinates	40° 50′ 06″ N - 38° 22′ 51″ E
Handled Cargo	Dry Bulk Cargo, General Cargo, Liquid Bulk, Ro-Ro, Passenger, Container
Handling Capacity	
- Container (TEU/Year)	-
- Dry Bulk Cargo (Ton/ Year)	3.000.000
- General Argo (Ton/ Year)	1.000.000
- Ro-Ro (Vehicle/ Year)	-
Total Port Area	94,000 m^2
Warehouse	22
Closed Warehouse	29,800 m^2
Customs Bonded Area	64,200 m^2
Parking Zone	-
Non-Bounded Area	-

Berth-Pier Dimensions	
Length	800
Maximum Draft	10

Equipment List	Number	Capacity / Ton
Crane	5	63-25-8-5-2,2
Loder	4	21,2-2x18,6-10
Bobcat	2	2x3
Forklift	3	10-5-3,5
Stacker	1	45

Contact Details	
Related Persons	Murat Solak
Address	Sultan Selim Mah. G.M.K Blv. No:9 Merkez - GİRESUN
Telephone	+90 454 216 23 82
Fax	+90 454 216 17 34
E-mail	murat.solak@tiryaki.com.tr
Web Site	www.giresunport.com.tr

GLOBAL TERMINAL

GTS
GLOBAL TERMINAL SERVICES

Port Features	
Administrator	Global Terminal Hizmetleri A.Ş.
Coordinates	**Pier 1 (YP1)**
	36° 08′ 02,25″ E 36° 08′ 04,09″ E
	36° 50′ 12,14″ N 36° 50′ 14,35″ N
	36° 08′ 04,76″ E 36° 08′ 00,56″ E
	36° 50′ 13,61″ N 36° 50′ 12,88″ N
	Pier 2 (YP2)
	36° 08′ 35,07″ E 36° 08′ 35,51″E
	36° 50′ 31,56″ N 36° 50′ 33,27″ N
	36° 08′ 36,37″ E 36° 08′ 34,21″ E
	36° 50′ 32,33″ N 36° 50′ 33,28″ N
	Pier 3 (YP3)
	36° 08′ 54,54″ E 36° 08′ 55,10″ E
	36° 50′ 43,17″ N 36° 50′ 44,66″ N
	36° 08′ 55,84″ E 36° 08′ 53,87″ E
	36° 50′ 43,93″ N 36° 50′ 43,90″ N
Handled Cargo	Crude Oil, Black and White Products
Handling Capacity	721.600 m^3
Total Port Area	62.251 m^2
Customs Warehouse (open)	222.576 m^2

Berth-Pier Dimensions	
Length	2.300 m Length jettty can accomadate between 1.000 - 230.000 displacement tonnage vessels.
Maximum Draft	YP1: 16,5 m / YP2: 12,5 m / YP3: 7,5 m

Contact Details	
Related Persons	Erkin Özçelik
Address	Yeşilköy Mah. Kırıkköprü Çankaya Cad. No:151 31650 Dörtyol - HATAY
Telephone	+90 326 734 16 20
Fax	+90 326 734 16 27
E-mail	erkin.ozcelik@globalterminal-tr.com
Web Site	www.globalterminal-tr.com

PARK DENİZCİLİK VE HOPA LİMAN İŞLETMELERİ A.Ş.

HOPAPORT

Port Features	
Administrator	Park Denizcilik ve Hopa Liman İşletmeleri A.Ş.
Coordinates	41º 24′ 45″ N - 41º 21′ 45″ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk, Ro-Ro
Handling Capacity	
- Container (TEU/year)	320.000
- Dry Bulk Cargo (Ton/yıl year	2.500.000
- General Cargo (Ton/ year)	600.000
- Liquid Bulk (Ton/ year)	900.000
Total port area	216.000 m²
Warehouse area (open)	102.462 m²
Closed warehouse	18.220 m²
Customs warehouse	5.000 m² + 22.000 m³
Grain Terminal	10 x 1000 Ton
Cement Terminal	7.700 Ton
Tank Terminal	32.000 m³
LPG Terminal	2 x 210 m³

Berth-Pier Dimensions	
Length	1.346 m
Maximum Draft	10 m

Equipment List	Number	Capacity / Ton
Quay Crane	2 (1+1)	10-25
Coles Vinç	3 (2+1)	10-25
Sennebogen 835	2	7

Contact Details	
Related Persons	Meriç Burçin Özer
Address	Ortahopa Mah. Liman Cd. 08600 Hopa - ARTVİN
Telephone / Fax	+90 466 351 22 59 / +90 466 351 47 91
E-mail	meric.ozer@hopaport.com.tr - hopaport@hopaport.com.tr
Web Site	www.hopaport.com.tr

IC KARASU PORT

Port Features			
Administrator	IC İçtaş Sakarya Karasu Limanı Yatırım ve İşletme A.Ş.		
Coordinates	41° 7′ 17″ N - 30° 40′ 37″ E		
Handled Cargo	Container, General Cargo, Dry Bulk Cargo, Ro-Ro, Passenger		
Handling Capacity (Ton/year)			
- Container (TEU/year)	50,000	Ro-Ro (Vehicle/ year)	65.000
- General/Bulk Cargo (Ton/ year)	1,500,000		
Total port area	476.000 m²		
Total storage area	74.500 m²		
Sheltered warehouse	6.500 m²		
Total Land Area	272.500 m²		
Customs Bonded Area (open)	78.130 m²		
Ro-Ro Park Area	48.179 m²		
Non Bonded Area (open)	142.500 m²		

Berth-Pier Dimensions	
Toplam Length	670 m
Maximum Draft	11 m

Equipment List	Number	Capacity / Ton
MHC	3	24-124
Forklift	8	3-32
Terminal Tractor	3	36
Bunker	2	60
Loader	2	-
Mini Loader	3	-

Contact Details	
Related Persons	Gökçen Erdem
Address	Yalı Mah. Batı Karadeniz Cd. No:244 Karasu - SAKARYA
Telephone	+90 264 888 44 00
Fax	+90 264 888 44 01
E-mail	gokcen.erdem@karasuport.com.tr
Web Site	www.karasuport.com.tr

İÇDAŞ 1 PORT

Port Features	
Administrator	İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş.
Coordinates	40° 27′ N - 27° 08′ E
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	20.000.000
- General Cargo (Ton/ year)	15.000.000
Total Port Area	200.000 m²
Closed Warehouse	250.000 mt mt product warehouse capacaity
Customs Area	75.000 m²

Berth-Pier Dimensions	Berth 1	Berth 2	Berth 3	Berth 4	Berth 5	Breakwater Berth
Length	275 m	275 m	325 m	325 m	475 m	350 m
Maximum Draft	22 m	22 m	28 m	28 m	12 m	22 m

Equipment List	Number	Capacity / Ton
Quay crane	2	45
Quay crane	2	50
Quay crane	6	100
Truck	26	150
Forklift	11	28/14

Contact Details	
Related Persons	Türker Özman
Address	Mahmutbey Mahallesi Dilmenler Caddesi No:20 34218 Bağcılar - İSTANBUL
Telephone	+90 212 604 0404 (Pbx)
Fax	+90 212 651 97 89 - +90 212 550 20 24
E-mail	icdas@icdas.com.tr
Web Site	www.icdas.com.tr

İÇDAŞ 2 PORT

Port Features	
Administrator	İçdaş Çelik Enerji Tersane ve Ulaşım San. A.Ş.
Coordinates	40° 24,5′ N - 27° 02,5′ E
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	15.000.000
- General Cargo (Ton/year)	10.000.000
Total Port Area	100.000 m²
Customs Area	15.000 m²

Berth-Pier Dimensions	Berth 1	Berth 2
Length	350 m	450 m
Maximum Draft	32 m	32 m

Equipment List	Number	Capacity / Ton
Quay crane	2	100
Excavator	2	30
Bobcat	2	-
Truck	3	30
Forklift	2	28/14

Contact Details	
Related Persons	Türker Özman
Address	Mahmutbey Mahallesi Dilmenler Caddesi No:20 34218 Bağcılar - İSTANBUL
Telephone	+90 212 604 0404 (Pbx)
Fax	+90 212 651 97 89 - +90 212 550 20 24
E-mail	icdas@icdas.com.tr
Web Site	www.icdas.com.tr

İDÇ PORT

Port Features	
Administrator	İDÇ Liman İşletmeleri A.Ş.
Coordinates	38° 76′ N - 26° 92′ E
Handling Capacity	
- Dry Bulk and General Cargo (Ton/year)	7.500.000
Total Port Area	196.717 m^2
Customs Warehouse (closed)	6.303 m^2
Customs Warehouse (open)	36.902 m^2

Berth-Pier Dimensions	Pier 1	Pier 2
Length	475 m	475 m
Maximum Draft	28 m	28 m

Equipment List	Number	Capacity / Ton
9300 Sennebogen	1	90
6200 Sennebogen	1	60
895E Sennebogen	1	50
880 Sennebogen	4	30
870 Sennebogen	1	20
850 Sennebogen	1	10
835 Sennebogen	1	10
630 M Sennebogen	1	15
Quay crane	2	12.5
Excavator	6	
Loader	8	
Forklift	12	2,5-3-7-9-12-16

Contact Details	
Related Persons	Emre Söyler
Address	Gümrük Caddesi No:7, Çakmaklı / Aliağa - İZMİR
Telephone	+90 232 625 54 65
Fax	+90 232 625 54 75
E-mail	idcport@idcliman.com.tr
Web Site	www.idcliman.com.tr

İGSAŞ İSTANBUL GÜBRE SANAYİİ A.Ş.

Port Features	
Administrator	İgsaş İstanbul Gübre Sanayii A.Ş.
Coordinates	40º 45″ N - 29º 45″ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Dry Liquid Cargo (Ammonia, Molasses)
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	3.000.000
Total Port Area	20.953 m²

Berth-Pier Dimensions	
Length	375 m + 243 m
Maximum Draft	21 m

Equipment List	Number	Capacity / Ton
Sennebogen 880	1	30
Liebherr LHM 250	1	65
ATLAS	1	6
Liebherr LH 40	3	5
Sennebogen 835	3	7
Ekskavatör	5	*
Loading Machine	1	Approx. 3000 mt/ daily
Bobcat	1	*
Loder	2	1
Forklift	3	5-10-32

Contact Details	
Related Persons	Özkan Uygur, Gürkan Bilge
Address	Güney Mah. Petrol Cad. No:27 41780 Körfez - KOCAELİ
Telephone	+90 262 316 22 30-31
Fax	+90 262 316 22 95-96-97
E-mail	ozkan.uygur@igsas.com.tr - gurkan.bilge@igsas.com.tr
Web Site	www.igsas.com.tr

İSKENDERUN DEMİR ÇELİK A.Ş.

Port Features	
Administrator	İskenderun Demir Çelik A.Ş.
Coordinates	36° 43,30′ N - 036° 11,06′ E / 36° 43,35′ N - 33° 11,15′ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk
Handling Capacity	
- General Cargo (Ton/year)	7.000.000 Ton (mevcut kap.)
- Dry Bulk Cargo (Ton/year)	13.000.000 Ton (mevcut kap.)
- Liquid Bulk (Ton/year)	1.000.000 Ton (mevcut kap.)
Total Port Area	786.896 m²
Customs warehouse (closed)	4.186 m²
Customs warehouse (open)	69.640 m²
Temporary storage area	270.190 m²

Berth-Pier Dimensions	
Length	1.501 m
Maximum Draft	19 m

Equipment List	Number	Marka	Capacity / Ton
Unloader Quay crane	2	Kawaden	50
MHC	3	Liebherr-Sennebogen	10-120
Quay crane	4	Caillard-Ardelt	55
Forklift	11	Kalmar-TMC	5-7-10-45
Loader	5	Volvo-Komatsu-Cat	6,5-20,2
Excavator	9	Liebherr-Cat-Komatsu-Volvo	20-25,7
Mini Loader	2	Cat-Gehl	3
Cleaning Vehicle	1	-	7 m³

Contact Details	
Related Persons	Önder Çağlayan
Address	İskenderun Demir ve Çelik A.Ş. Karşı Mahalle Şehit Yüzbaşı Ali Oğuz Bulvarı No:1 31900 Payas - HATAY
Telephone / Fax	+90 326 758 42 80 - +90 326 758 52 41
E-mail	ocaglayan@isdemir.com.tr
Web Site	www.isdemir.com.tr

KORUMA KLOR ALKALİ

Port Features

Administrator	Koruma Klor Alkali San. ve Tic. A.Ş.
Coordinates	40º 45′ 1.44″ N - 29º 51′ 41.1″ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Liquid Bulk
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	50.000
- General Cargo (Ton/year)	100.000
- Liquid Bulk (Ton/ year)	250.000
Total Port Area	3.060 m^2

Berth-Pier Dimensions

Length	155 m
Maximum Draft	12,5 m

Contact Details

Related Persons	Özgür GÖKKAYA
Address	Deniz Mahallesi Petrol Ofisi Cad. No:43 41900 Derince - KOCAELİ
Telephone / Fax	+90 262 239 22 70 / +90 262 223 12 12
E-mail	ozgur.gokkaya@koruma.com.tr
Web Site	www.koruma.com

KROMAN PORT

Port Features	
Administrator	Kroman Çelik Sanayi A.Ş.
Coordinates	40° 46′ 35″ N - 29° 35′ 45″ E
Handled Cargo	General Cargo, Dry Bulk Cargo
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	3.000.000
- General Cargo (Ton/year)	
Total Port Area	29.000 m^2
Warehouse Area	16.000 m^2
Bounded Area	16.000 m^2
Parking Area	1.000 m^2

Berth-Pier Dimensions	
Length	420 m
Maximum Draft	13 m

Equipment List	Number	Capacity / Ton
MHC	3	40
Ekskavatör	9	8-18
Forklift	5	5-20

Contact Details	
Related Persons	Ali Çakar
Address	Kroman Liman Tesisleri Tavşancıl / Dilovası - KOCAELİ
Telephone	+90 262 753 04 62 - 63
Fax	+90 262 753 05 14
E-mail	ali.cakar@kromancelik.com.tr
Web Site	www.kromancelik.com.tr

KUMPORT

Port Features	
Administrator	Kumport Liman Hiz. ve Loj. San. Tic. A.Ş.
Coordinates	40º 58′ N - 028º 41′ E
Handled Cargo	Container, General Cargo, Ro-Ro
Handling Capacity	
Container (TEU/year)	2.100.000
Total Port Area	473.347 m^2
Closed Warehouse	7.977 m^2
Customs Warehouse (open)	369.605 m^2

Berth-Pier Dimensions	
Length	2.238 m
Maximum Draft	16,5 m

Equipment List	Number	Capacity / Ton
SSG	9	70
MHC	5	104
RTG	24	45
Stacker	12	45
Empty Stacker	8	8

Contact Details	
Related Persons	E. Oğuzhan Ağca
Address	Marmara Mah. Liman Cad. No:43 34524 Beylikdüzü - İSTANBUL
Telephone	+90 212 866 83 74
Fax	+90 212 875 27 60
E-mail	eoagca@kumport.com.tr
Web Site	www.kumport.com.tr

KUŞADASI CRUISE PORT - TRKUS

Port Features

Administrator	Ege Liman İşletmeleri A.Ş. (Ege Port)
Coordinates	37º 51' 48" N - 27º 15' 18" E
Handled Cargo	Passenger
Total Port Area	23.096 m^2
Customs Area (open)	2.164 m^2
Pier Area	8.673 m^2
Equipment Parking Area	3.380 m^2

Berth-Pier Dimensions

Pier No 1-2	300 m length	9.5m – 17.0 m depth
Pier No 3-4	253 m length	10.0m – 17.0 m depth
Pier No 5-6	331 m length	10.0m – 18.0 m depth
Pier No 7-8	387 m length	10.0m - 18.0 m depth

Contact Details

Related Persons	Aziz Güngör
Address	Ege Port - Kuşadası Yolcu Limanı, Kuşadası - AYDIN
Telephone	+90 256 614 15 81
Fax	+90 256 614 13 10
E-mail	info@egeportkusadasi.com
Web Site	www.kusadasicruiseport.com - www.globalportsholding.com

LİKİT PORT TERMINAL

Port Features	
Administrator	Likit Kimya San. ve Tic. A.Ş.
Coordinates	41° 00’ 29’’ N - 27° 59’ 43’’ E
Handled Cargo	Liquid Chemical Products
Handling Capacity	
- Liquid Bulk (Ton/year)	4.000.000
Total Port Area	1.447 m²

Berth-Pier Dimensions	
Length	272 m
Maximum Draft	17,5 m

Equipment List	Number	Capacity / Ton
Hose handling crane	1	2,5 tons – 22M

Contact Details	
Related Persons	Yaşar Acaroğlu
Address	Sultanköy Mah. Ekşielma Cad. No: 28 Marmaraereğlisi - TEKİRDAĞ
Telephone	+90 282 613 41 38 #204
Fax	+90 282 613 41 39
E-mail	yasar_acaroglu@likitkimya.com
Web Site	www.likitport.com

LİMAKPORT İSKENDERUN

Port Features

Administrator	Limak İskenderun Uluslararası Liman İşletmeciliği A.Ş.
Coordinates	36° 36′ N - 36° 11′ E
Handled Cargo	Container, Project Cargo, General Cargo, Dry Bulk Cargo, Ro-Ro, Livestock
Handling Capacity	
- Container (TEU/year)	1.000.000
- Dry Bulk Cargo (Ton/year)	3.000.000
- General Cargo (Ton/year)	1.000.000
- Ro-Ro (CEU/year)	100.000
Total Port Area	1.000.000 m^2

Berth-Pier Dimensions

Length	1.432 m
Maximum Draft	15.5 m

Contact Details

Related Persons	Gündüz Arısoy
Address	Limakport İskenderun Limanı, İskenderun - HATAY
Telephone	+90 326 626 16 00
Fax	+90 326 614 00 48
E-mail	musterihizmetleri@limakports.com
Web Site	www.limakports.com

LİMAŞ LİMAN İŞLETMECİLİĞİ A.Ş.

Port Features	
Administrator	Limaş Liman İşletmeciliği A.Ş.
Coordinates	40° 43' 04" N - 29° 53' 07" E
Handled Cargo	Container, General Cargo, Dry Bulk Cargo, Liquid Bulk (Chemicals, Fuel oil and oil products, base oil)
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	1.000.000
- General Cargo (Ton/year)	1.000.000
- Liquid Bulk (Ton/year)	3.500.000
Total Port Area	120.000 m²
Temporary Storage Area	44.100 m²
Parking Area	1.000 m²

Berth-Pier Dimensions	Berth 1	Berth 2
Length	202 m	285 m
Width	20,4 m	22,0 m
Maximum Draft	11,5 m	11,5 m

Equipment List	Number	Capacity (m^3)
Tanks	85	269.428 m^3
MHC	2	160 (18 row)
Sennebogen 835-R	1	8,5

Contact Details	
Related Persons	Dr. Kürşat Bal
Address	Sepetlipınar mah. Sanayi Cad. No: 73, Başiskele - KOCAELİ
Telephone	+90 262 317 58 00
Fax	+90 262 341 30 67
E-mail	kursat.bal@limas.com.tr
Web Site	www.limas.com.tr

MARDAŞ

MARDAŞ

Port Features	
Administrator	Mardas Maritime Management Inc.
Coordinates	40º 57.08′ N - 028º 40.07′ E
Handled Cargo	Container, General Cargo, Bulk, Bulk Solid
Handling Capacity	
- Container (TEU/ year)	2.000.000
- General Cargo (Ton/year)	3.000.000
Total Area	265.415,40 m²
Non-bonded Off-Dock Area	132.972,40 m²
Customs Warehouse	9.369 m²
Customs Area	123.074 m²
Automobile – Truck Parking Area	10.000 m²
CFS	5.000 m²

Berth-Pier Dimensions	
Length	1.115 m
Maximum Draught	16,5 m

Equipment List	Number	Capacity / Ton
SSG	3	24 row
Mobile Crane	9	100-140
RTG	12	40
Reach Stacker	21	10-45
Excavator	6	10,7-22-22,3
Terminal Tractor	45	32-35-43,5
Forklift	44	3-5-10-12
Reach Truck	10	2
Loader	4	2,5-12-14,5

Contact Details	
Related Persons	Gökhan Bekircan
Address	Marmara Mahallesi Liman Caddesi Dış Kapı No:51 İç Kapı No:1 34524 Beylikdüzü - İSTANBUL
Telephone / Fax	+90 212 875 27 32 - +90 212 875 27 38
E-mail	gokhanb@mardas.com.tr
Web Site	www.mardas.com.tr

MARPORT

Port Features

Administrator	Marport Terminal Operators S.A.
Coordinates	40° 57′ 50″ N - 28° 40′ 25″ E
Handling Capacity	
Container (TEU/year)	2.300.000
Total Port Area	530.000 m^2
Closed Warehouse	6.103 m^2
Gümrüklü Açık Alan	428.810 m^2

Berth-Pier Dimensions

Length	1.675 m + 30 m dolfen
Maximum Draft	18 m

Equipment List	Number
STS	14
MHC	5
RTG	41
CRS	8
ECS	10
Truck	102
Trailer	113

Contact Details

Related Persons	Alp Çapa, Özgür Kalelioğlu
Address	Marmara Mahallesi, Liman Caddesi No: 53/1 Beylikdüzü - İSTANBUL
Telephone	+90 212 866 52 00
Fax	+90 212 875 43 43
E-mail	info@marport.com.tr
Web Site	www.marport.com.tr

MARTAŞ PORT

Port Features	
Administrator	Martaş Marmara Ereğlisi Liman Tesisleri A.Ş.
Coordinates	40º 58′ N - 27º 56′ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk, Ro-Ro, Passenger, Container, Live Stock
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	3.000.000
- General Cargo (Ton/ year)	2.500.000
- Liquid Bulk (Ton/ year)	500.000
Total Port Area	135.320 m²
Warehouse Area	25.000 m²
Closed Warehouse	6.000 m²
Customs Warehouse	18.960 m²
Customs Area	135.320 m²
Parking Area	20.000 m²
Equipment Parking Area	5.000 m²

Berth-Pier Dimensions	
Length	1.500 m
Maximum Depth	20 m

Equipment List	Number	Capacity / Ton
MHC	10	15 - 20 - 35 - 120 - 180
Forklift	9	3 - 7 – 16 - 32
Excavator	5	

Contact Details	
Related Persons	Orhan Çebi - Hayati Şahin
Address	Martaş Marmara Ereğlisi Liman Tesisleri Bahçelievler Mah.Limanyolu Cad.No:19/ A Marmara Ereğlisi - TEKİRDAĞ
Telephone	+90 216 547 49 00 - +90 282 613 18 79
Fax	+90 216 428 74 74 - +90 282 613 18 51
E-mail	orhancebi@kaptandemir.com.tr hayati.sahin@kaptandemir.com.tr
Web Site	www.kaptandemir.com.tr

MESBAŞ - MERSİN FREE ZONE

Port Features	
Administrator	MESBAS - Mersin Free Zone Founder and Operator Inc.
Coordinates	36º 46’ 20’’ N - 34º 39’ 00’’ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Liquid Bulk, Container
Handling Capacity (Ton/year)	2.000.000 (Ton/year)
Warehouse Area	-
Customs Area	-
Open Area	6.000 m²
Total Port Area	38.532 m²

Berth-Pier Dimensions	
Length	521 m + 100 m
Maximum Draft	10.0 m

Equipment List	Number	Capacity (Ton)
MHC	2	40
MHC	3	70

Contact Details	
Related Persons	Edvar Mum
Address	MESBAS Administration Building, Free Zone - Akdeniz / Mersin
Telephone	+90 324 238 74 00
Fax	+90 324 238 74 10
E-mail	mail@mesbas.com.tr
Web Site	www.mesbas.com.tr

MERSİN INTERNATIONAL PORT

MIP
MERSIN INTERNATIONAL PORT
A MEMBER OF PSA GROUP

Port Features	
Administrator	Mersin Uluslararası Liman İşletmeciliği A.Ş.
Coordinates	36° 47,15′ N - 034° 38,50′ E / 36° 47,30’ N - 034° 38,6’ E
Handled Cargo	Container, General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk, Ro-Ro, Passenger
Handling Capacity	
- Container (TEU/year)	2.600.000
- General Cargo (Ton/year)	1.000.000
- Dry Bulk Cargo (Ton/year)	9.000.000
Vehicle/Passenger	150.000 Vehicle / 20.000 Passenger
Total Port Area	124 hektar
Closed Warehouse	8.412,80 m^2
Customs B. Warehouse (open)	1.360.000 m^2

Berth-Pier Dimensions	
Length	3.450 m (Excluding Ataş, Nato and Free Zone Berths)
Maximum Draft	15,8 m

Equipment List	Number	Capacity / Ton
SSG	11	40-65
MHC	6	70-150
RTG	42	35-41
Stacker	22	45
Empty Stacker	15	12

Contact Details	
Related Persons	Yüksel Nuri Peker
Address	Cami Şerif Mahallesi İsmet İnönü Bulv. No:13A Akdeniz - MERSİN
Telephone	+90 324 241 29 00
Fax	+90 324 232 46 71
E-mail	npeker@mersinport.com.tr
Web Site	www.mersinport.com.tr

MMK METALURJİ

Port Features

Administrator	MMK Metalurji San. Tic. ve Liman İşletmeciliği A.Ş.
Coordinates	36º 46" 51.7' N - 36º 11" 12' E
Handled Cargo	Container, General Cargo, Dry Bulk Cargo, Project Cargo
Handling Capacity	
- General Cargo (Ton/year)	4.000.000
- Dry Bulk Cargo (Ton/year)	6.000.000
Total Port Area	40.000 m²
Closed Warehouse	15.000 m²
Customs Warehouse (open)	20.000 m²

Berth-Pier Dimensions	Length (m)	Width (m)	Max. Draft (m)
Pier 1	265	42	14,00
Pier 2	265	42	13,50
Pier 3	155	30	6,20
Pier 4	200	17	9,00
Pier 5	200	17	11,50
Pier 6	160	17	12,00
Pier 7	265	42	13,50
Pier 8	265	42	14,00

Cranes	Number	Capacity (Ton/day)
	1	6.000, 7.000
	5	5.000, 6.000
	7	3.000, 2.000

Contact Details

Related Persons	Gürol Çetin
Address	Özerli Mah. Alparslan Türkeş Blv. No:342/91 31600, Dörtyol - HATAY
Telephone	+90 326 770 10 00 - 1513
Fax	+90 326 718 16 18
E-mail	gurolcetin@mmkturkey.com.tr
Web Site	www.mmkturkey.com.tr

NEMPORT LİMAN İŞLETMELERİ

Port Features	
Administrator	Nemport Liman İşletmeleri ve Özel Antrepo Nakl. Tic. A.Ş.
Coordinates	38º 46″ 07′ N - 26º 55″ 51′ E
Handled Cargo	Container, General Cargo, Project Cargo
Handling Capacity	
- Container (TEU/year)	1.750.000
- General Cargo (Ton/year)	2.000.000
Total Port Area	285.000 m^2
Customs Warehouse (open)	240.000 m^2
Parking Area	26.000 m^2

Berth-Pier Dimensions	
Length	1.689 m
Width	40 m / 55 m
Maximum Draft	19 m

Equipment List	Number	Capacity / Ton
SSG	5	65 Ton
MHC	5	4x100 T – 1x140 T
E-RTG	15	6+1– 7
CRS	11	5 High 45 T
ECS	3	6 High 10 T
ECH	4	8 High 9 T
Truck	50	60 T

Contact Details	
Related Persons	Hakan Turunç
Address	Siteler Mah. Kardeşlik Cad. No:12 Nemrut Körfezi, Aliağa 35800 - İZMİR
Telephone	+90 232 618 3001
Fax	+90 232 618 3020
E-mail	hturunc@nemport.com.tr
Web Site	www.nemport.com.tr

NUHPORT

nuh
çimento sanayi a.ş.

Port Features	
Administrator	Nuh Çimento San. A.Ş.
Coordinates	40º 46,5′ N - 29º 36,5′ E
Handled Cargo	General Cargo, Dry Bulk Cargo
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	5.000.000
- General Cargo (Ton/year)	500.000
Total Port Area	57.000 m²
Bonded Warehouse	5.000 m²

Berth-Pier Dimensions	
Length	595 m
Maximum Depth	16 m

Equipment List	Number	Capacity (Ton)
Ameco Crane and Conveyor.	1	800 Ton/hr
Liebherr LPS 420E	1	Swl 124 Mt
Liebherr LPS 400	1	Swl 104 Mt
Liebherr LHM 250	1	Swl 64 Mt
Mobil Vinç	5	Swl 12Mt - 7 Mt
Forklift	9	10 Mt – 3 Mt

Contact Details	
Related Persons	Abdulhamit Akçay
Address	Hacı Akif Mh. D-100 Karayolu Cd. No:92 41800 Hereke - KOCAELİ
Telephone / Fax	+90 262 316 20 00 - +90 262 316 25 30
E-mail	nuhport@nuhcimento.com.tr abdulhamit.akcay@nuhcimento.com.tr
Web Site	www.nuhcimento.com.tr

PETKİM PORT

PETKiM

Port Features	
Administrator	Petkim Petrokimya Holding A.Ş.
Coordinates	38° 46.550′ N - 026° 55.408′ E Harbor light at E position and 38° 46′ 30″ N - 026° 55′ 30″ E on land 38° 46′ 30″ N - 026° 55′ 49 ″ It was established in the area connecting to point E.
Handled Cargo	Petroleum and Petroleum Derivatives within the Scope of MARPOL APPENDIX 1 & APPENDIX 2 Propylene, Butane, Liquefied Petroleum Gas and Ammonia within the scope of IGC CODE, Paraxylene, Acrylonitrile, Paygaz, Naphtha, C5, Orthoxylene, Acetic Acid, Heptane, Hexane, Meg, Deg, Aromatic Oil, Cuttersotck, VCM, EDC, Raffinate and Caustic within the scope of IBC CODE
Handling Capacity (Ton/year)	1.500.000 (Total)

Berth-Pier Dimensions	**Quay - II**	**Quay - III**	**Jetty - V**
Length (m)	It is out of use due to the works carried out within the scope of modernization, and the Ship / Cargo operation is not carried out	190	221
Maximum Depth (m)		11,49	10,5

Contact Details	
Related Persons	Ali Samed Ataman
Address	Petkim Petrokimya Holding A.Ş, Siteler Mah. Necmettin Giritlioğlu Cad. No: 6/1, SOCAR Türkiye Aliağa Yönetim Binası 35800 Aliağa - İZMİR
Telephone	+90 232 616 12 40 (2690)
Fax	+90 232 616 36 53
E-mail	samed.ataman@socar.com.tr
Web Site	www.petkim.com.tr/liman-operasyonlari

POLİPORT

Port Features

Administrator	Poliport Kimya Sanayi ve Ticaret A.Ş.
Coordinates	40º 46′ N - 29º 31′ E
Handled Cargo	General Cargo, Dry Bulk Cargo, Liquid Bulk
Handling Capacity	
- Dry Bulk Cargo (Ton/year)	3.000.000
- General Cargo (Ton/ year)	2.000.000
- Liquid Bulk (Ton/ year)	2.500.000
Tank Storage Capacity	272.727 m^3
Total Port Area	230.000 m^2
Customs Warehouse (closed)	6.394 m^2
Customs Warehouse (open)	29.881 m^2
Temporary Bonded Warehouse	8.600 m^2
Domectic Warehouse	3.100 m^2

Berth-Pier Dimensions

Length	1.200 m
Maximum Draft	Min. 10.0 Maks. 27,0 m

Equipment List	Number	Capacity / Ton
Crane	6	20 - 124

Contact Details

Related Persons	Erdoğan Akdeniz, Güven Karagüven, Burçin Yalazan
Address	Dilovası Organize Sanayi Bölgesi 1. Kısım Liman Cd. No:7 Dilovası - KOCAELİ
Telephone / Fax	+90 262 679 71 00 / +90 262 754 52 25
E-mail	eakdeniz@poliport.com, gkaraguven@poliport.com byalazan@poliport.com
Web Site	www.poliport.com

PORT YARIMCA RO-RO TERMINAL

Port Features	
Administrator	Oyak Nyk Ro-Ro Port Management Inc.
Coordinates	29º 45’ 253” N - 40º 45’ 731” E
Handled Cargo	Ro-Ro
Handling Capacity	
- Vehicle (CEU/Year)	780.000
Total Port Area	235.000 m²
Multi Storey Car Park	265.000 m²

Berth-Pier Dimensions	
Length	540 m
Maximum Draft	12 m

Equipment List	Number	Capacity / Ton
Terminal Tractor	1	G.V.W 47 tons / G.C.W 130 tons
Gooseneck	2	SWL 36 tons / Tare 3.5 tons
Forklift	2	9 tons, 5 tons

Contact Details	
Related Persons	Gökalp Sözen
Address	Mimar Sinan Mahallesi Seramik Caddesi No:2
	41780 Körfez - KOCAELİ
Telephone	+90 262 310 56 00
Fax	+90 262 310 57 49
E-mail	info@portyarimca.com
Web Site	www.portyarimca.com

QTERMINALS ANTALYA

Port Features	
Administrator	Ortadoğu Antalya Liman İşletmeleri A.Ş.
Coordinates	36° 50′ 02′′ N - 30° 36′ 59″ E
Kıyı Tesisi İşletme İzin Belgesine Göre Tesise Yanaşacak Gemi Cinsleri	All types of general / bulk cargo ships, container ships, ro-ro ships which carries vehicles on tyre, all types of cruise ships
Handling Capacity	
- Container (TEU/year)	350.000
- Dry Bulk Cargo (Ton/ year)	4.000.000
- Passenger	600.000
Total Port Area	203.920 m^2
Warehouse	30.918 m^2
Customs Area	Whole port area
Custom Bounded Warehouse	1.440 m^2
Parking area	5.000 m^2
CFS Area	50.000 m^2
Outside Warehouse	6.729 m^2

Berth-Pier Dimensions	
Length	1.178 m
Maximum Draft	9,50 m

Equipment List	Number	Capacity / Ton
MHC	8	40 - 150
Excavator	9	5 - 15
Stacker	6	45
Side Lifter	1	8
Mini Loader	3	1,4 m^3
Last. Loader	2	2,5-5,5 m^3
Forklift	35	3-5-10-16-33

Contact Details	
Related Persons	Özgür Sert
Address	Liman Mh. Liman Cad. 07130 Konyaaltı - ANTALYA
Telephone / Fax	+90 242 259 13 80 / +90 242 259 11 83
E-mail	osert@qterminals-antalya.com
Web Site	www.qterminals-antalya.com

RİPORT LİMAN İŞLETMESİ A.Ş.

RİPORT®
RİZE LİMANI İŞLETMESİ YATIRIM A.Ş.

Port Features	
Administrator	Riport Liman İşletmesi A.Ş.
Coordinates	41º 02′ 47″ N - 40º 34′ 20″ E
Handled Cargo	General Cargo, Dry Bulk Cargo
Handling Capacity	
- Container (TEU/year)	10.000
- Dry Bulk Cargo General Cargo (Ton/year)	3.000.000
- Ro-Ro (Ton/year)	4.000
Total Port Area	181.335,42 m^2
Warehouse Area (open)	30.000 m^2
Closed Storage Area	14.348,62 m^2
General Warehouse	1.000 m^2
Temporary Storage Area	3.360,62 m^2
Semi-enclosed Storage Area	11.542 m^2

Berth-Pier Dimensions	
Length	557,50 m
Maximum Draft	11 m

Equipment List	Number	Capacity (Ton)
TUG BOAT “ALİBABA” (offshore tugboat)	1	32 Ton
TUG BOAT “Riport Pilot”	1	760 BHP
RİPORT-1 PALAMAR BOAT “mooring boat”	1	260 BHP
Tractor (NEW HOLLAND)(sweeping vehicle)	1	
Forklift (LİNDE)	1	10 Ton
Sweeping vehicle	1	
Mobile crane (COLES)	1	10 Ton
210 KWA Generator	1	
Electronic scale	1	80 Ton

Contact Details	
Related Persons	Asım Çillioğlu
Address	Rize Liman İşletmesi Yatırım A.Ş. Riport Plaza Menderes Bulvarı, Rize Limanı - RİZE
Telephone / Fax	+90 464 223 53 53 / +90 464 223 55 55
E-mail	asimcillioglu@riport.com
Web Site	www.riport.com.tr

RODA PORT

Port Features	
Administrator	Roda Liman Depolama ve Lojistik İşletmeleri A.Ş.
Coordinates	40º 24" N - 29º 32" E
Handled Cargo	Container, General Cargo ve Bulk Cargo
Handling Capacity	
- Container (TEU/year)	200.000
Bulk and General Cargo (Ton/year)	3.000.000
Total Port Area	111.435 m²
Terminal Closed & Semiclosed Warehouse	11.500 m²
Total Custom Bonded Warehouse (Open)	97.219 m²
Total Customs Unbonded Warehouse (Open & Closed)	67.797 m²
A type Custom bonded warehouse (Closed)	23.000 m²
A type Custom bonded warehouse(Open)	9.721 m²
Full Closed Unbonded Warehouse	15.799 m²

Berth-Pier Dimensions	
Length	1.200 m
Maximum Depth	14,50 m

Equipment List	Number	Capacity / Ton
MHC	5	100
Excavator	5	10-25
RTG	2	40
Reachsteaker (Full)	5	45
Reachsteaker (Empty)	1	10
Terminal Track	19	Kalmar & Mercedes
Trailer	29	Container & Sal & TpŞase & Hrdx
Loader	1	19 ton – 6 m³
Portal Crane	2	30-35
Heavy cargo forklift	4	16-32
Light cargo forklifts	16	2-7
Overhead crane	17	5-35
Narrow corridor stacking mach.	2	1,5
Wide corridor stacking mach.	1	1,6
Electric pallet truck	3	2,5
Mini loader	6	2,5/3,5

Contact Details	
Related Persons	Y. Ahmet Yavuz
Address	Ata Mah. 146 No.lu Sokak No:5 16600 Gemlik - BURSA
Telephone / Fax	+90 224 519 00 30 / +90 224 519 00 31
E-mail	info@rodaport.net
Web Site	www.rodaport.com

SAMSUNPORT

Port Features

Administrator	Samsunport - Samsun International Port Management Inc.
Coordinates	41° 18’ 00’’ N - 36° 22’ 00’’ E
Handled Cargo	Container, General Cargo, Project Cargo, Bulk Cargo (Solid/Liquid), Ro-Ro, Train Ferry, Passenger, Livestock, Yacht
Handling Capacity	
- Container (TEU/year)	300.000
- General and Bulk Cargo (Ton/Year)	14.500.000
- Liquid Bulk Cargo (Ton/Year)	100.000
- Ro-Ro (Truck)/Passenger	100.000 / 20.000
Total Port Area	445.000 m²
Closed Warehouse	50.000 m²
Silo (Ton)	84.000

Berth-Pier Dimensions

Length	1.756 m
Maximum Draft	10,50 m

Equipment List	Number	Capacity / Ton
Crane	13	1 – 124

Contact Details

Related Persons	Vedat Kamsız
Address	Hançerli Mah. Sahil Yolu Sk. No:35 55100 İlkadım – SAMSUN
Telephone	+90 362 445 14 00
Fax	+90 362 445 14 08
E-mail	info@samsunport.com.tr
Web Site	www.samsunport.com.tr

SOCAR TERMINAL

Port Features	
Administrator	SOCAR Aliağa Liman İşl. A.Ş.
Coordinates	38º 46" 44' N - 26º 55" 51' E
Handled Cargo	Container, General Cargo
Handling Capacity	
- Container (TEU/year)	1.500.000
Total Port Area	420.000 m² (20.000 m² Unbonded Area)
Closed Warehouse	1.754 m²
Shed	699 m²
Customs Warehouse (Open)	400.000 m²
Truck Parking Area (Pre-gate)	30.000 m²

Berth-Pier Dimensions	
Length	700 m (Container) / 150 m (General Cargo)
Maximum Draft	16 m (Container) / 10 m (General Cargo)

Equipment List	Number	Capacity / Ton
STS	3	70
RTG	10	45
Reach Stacker	3	45
Empty Container Handler	3	8
Terminal Tractor	26	50

Contact Details	
Related Persons	Arcan Fayatorbay
Address	Siteler Mahallesi Kardeşlik Caddesi No:16 35800 Aliağa - İZMİR
Telephone/ Fax	+90 232 455 65 55
E-mail	izmir@socarterminal.com
Web Site	www.socarterminal.com

SOLVENTAŞ

Port Features	
Administrator	Solventaş Teknik Depolama A.Ş.
Coordinates	40º 46″ 0,34′ N - 29º 32″ 40′ E
Handled Cargo	Liquid Bulk, Dry Chemicals
Handling Capacity	
- Liquid Bulk (Ton/year)	4.000.000
Total Port Area	24.000 m²
Closed Warehouse	1.579 m²
Customs Area (open)	24.000 m²

Berth-Pier Dimensions	Jetty-1	Jetty-2
Length	270 m	235 m
Maximum Draft	11 m	11 m

Contact Details	
Related Persons	Serhan Cilengir
Address	Dilovası Organize Sanayi Bölgesi 1. Kısım Tuna Cad. No: 7 41455, Dilovası - KOCAELİ
Telephone	+90 262 648 27 00
Fax	+90 262 648 27 95
E-mail	serhan.cilengir@aryholding.com
Web Site	www.solventas.com.tr

TFS - TURKISH FUEL SERVICES

Port Features	
Administrator	TFS Akaryakıt Hizmetleri A.Ş.
Coordinates	41° 18′ 48.12″ N - 28° 47′ 19.71″ E
Handled Cargo	JET A-1
Handling Capacity	
- Liquid Bulk (Ton/year)	10.000.000
Total Dolphin Area	841.713,420 m²
	318.574,820 m²
Closed Warehouse	-

Berth-Pier Dimensions	125.000 DWT
Length	320 m
Maximum Draft	18 m

Equipment List	Number	Capacity / Ton
Tank	10	300.000 m³
Loading Arm	3	1x16"+ 2x12"
Quick Release Hook	8	2x150 t (triple) + 6x100 t (double)

Contact Details	
Related Persons	B. Fatih Demir, R. Bayram Göktaş
Address	Yeniköy Mah. Hezarfen Ahmed Çelebi Caddesi No:4/1 34277 Arnavutköy - İSTANBUL
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E-mail	bfatih.demir@turkishfuel.com - bayram.goktas@turkishfuel.com
Web Site	www.turkishfuel.com

TOROSPORT CEYHAN

TOROSPORT

Port Features	
Administrator	Toros Tarım Sanayi ve Ticaret A.Ş. (Ceyhan Terminal)
Coordinates	West Jetty (Shore/Sea Side)
	36 55 00 N-35 58 54 E / 36 54 24 N - 35 59 06 E
	East Jetty (Shore/Sea Side)
	36 55 12 N-35 59 18 E / 36 58 53 N-35 59 03 E
Handled Cargo	General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk
Handling Capacity	
- D.Bulk and G.Cargo (Ton/year)	14.400.000
- Liquid Bulk (Ton/ year)	13.500.000
Total Port Area	750.000 m²
Open Warehouse Area	550.000 m² - open warehouse area
Closed Warehouse	40.480 m² - chemicals tanks
	60.751 m² - dry bulk warehouse
Customs Warehouse	189.500 m³ - tanks
	20.250 m² - closed grain warehouse
	57.650 m2 - open dry bulk warehouse
Parking Area	30.000 m²
Equipment Parking Area	10.000 m²

Berth-Pier Dimensions	
Length	1.465 m
Maximum Draft	15,50 m

Contact Details	
Related Persons	Mehmet Pusat
Address	Sarımazı Mahallesi, Ceyhan - ADANA
Telephone	+90 322 634 22 22 (dahili: 241)
Fax	+90 322 634 23 23
E-mail	mehmet.pusat@toros.com.tr
Web Site	www.torosterminal.com.tr

TOROSPORT SAMSUN

TOROSPORT

Port Features	
Administrator	Toros Tarım Sanayi ve Ticaret A.Ş. (Samsun Terminal)
Coordinates	36’ 27’’ 24” N - 41’ 15’’ 02” E
Handled Cargo	Genel General Cargo, Dry Bulk Cargo, Project Cargo, Liquid Bulk
Handling Capacity	
- D.Bulk and G.Cargo (Ton/year)	4.608.000
Liquid Bulk (Ton/ year)	3.650.000
Total Port Area	1.189.000 m²
Warehouse Area	223.600 m²- open warehouse area
Closed Warehouse	96.825 m³ - chemicals tanks
	40.951 m² - closed dry bulk warehouse
Parking Area	3.215 m²
Equipment Parking Area	1.000 m²

Berth-Pier Dimensions	
Length	408 m
Maximum Draft	19 m

Contact Details	
Related Persons	Hüseyin Bayraklı
Address	Yamanevler Mahallesi, Ahmet Tevfik İleri Caddesi, 4B Plaza
	No: 22-26, İç Kapı No: 48, Kat: 12-13 34768 Ümraniye – İSTANBUL
Telephone	+90 212 357 02 02 / Dahili: 260
Fax	+90 212 357 02 31 – 32
E-mail	huseyin.bayrakli@toros.com.tr
Web Site	www.torosterminal.com.tr

ULUSOY ÇEŞME PORT

Port Features

Administrator	Ulusoy Çeşme Liman İşletmesi A.Ş.
Coordinates	38° 19′ 30″ N - 26° 17′ 44″ E
Handled Cargo	Vehicle, Passenger
Total Port Area	80.000 m^2

Berth-Pier Dimensions

Main pier	322.0 mt x15 mt.(1 dolphin) Depth:8.0-16mt
Ro-Ro pier	213.0 x 8,60 mt.(5 dolphin) Maximum Draft: -16 m
Small pier	50.0 mt x 5 mt. Maximum Draft: -7.0 m

Contact Details

Related Persons	Celal Ulaş
Address	Musalla Mah. 1107 Sokak No:2 ÇEŞME - İZMİR
Telephone	+90 232 712 87 49
Fax	+90 232 712 04 27
E-mail	cesmeport@ulusoysealines.com
Web Site	www.ulusoycesmeport.com

YALOVA RO-RO TERMİNALİ

Port Features	
Administrator	Yalova Ro-Ro Terminali A.Ş.
Coordinates	41° 41' 25" N - 29° 25' 52" E
Handled Cargo	Ro-Ro Cargo Units
Handling Capacity	
- Container (TEU/year)	0
- Bulk and General Cargo (Ton/ year)	0
- Liquid Bulk (Ton/ year)	0
- Ro-Ro (Vehicle/ year)	150.000
Total Port Area (Customs)	135.000 m²
Closed Warehouse	14.000 m²
Parking Area	100.000 m²

Berth-Pier Dimensions	
Length	300 m Pier, 300 metre Dolfen, Total 3 Ramps
Maximum Draft	10 m

Equipment List	Number	Capacity / Ton
Waste Receiption Facility	7 Tank	450 m³
ADR'li Tanker	1	36 m³
Terminal Tractors	14	60
Reach Stacker	3	45
Mooring Boat	1	-

Contact Details	
Related Persons	Mehmet Akif Karamehmetoğlu - Mustafa Özlen Atçeken
Address	Taşköprü Merkez Mah. Yalova - Kocaeli Yolu Cad. No:4/1-2 Çiftlikköy - YALOVA
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Web Site	www.yalovaroro.com

YEŞİLOVACIK LİMAN İŞLETMELERİ A.Ş.

medcem PORT

Port Features	
Administrator	Yeşilovacık Liman İşletmeleri A.Ş.
Coordinates	36.10747 N - 33.39042 E
Handled Cargo	Bulk Cargo, General Cargo
Total Bulk and General Cargo (Ton/year)Total Port Area	12.000.000
Total port area	57.000 m²
Cement/Clinker Silo	58.000 t / 50.000 t
Closed Warehouse	6.000 m²

Berth-Pier Dimensions	
Length	772 m
Maximum Draft	21m

Equipment List	Number	Capacity / Ton
Liebherr LPS 420	1	124 ton
BEDESCHI Shiploader	3	1.300 t/h
ARTEK Shiploader	1	500 t/h

Contact Details	
Related Persons	Seçkin Karaca
Address	Atatürk Mah.Ertuğrul Gazi Sk. Metropol İst. St .C2 Bl. Ap.2a/28, Ataşehir - İSTANBUL
Telephone / Fax	+90 324 747 51 10 / +90 324 747 51 90
E-mail	medcemport@medcem.com.tr
Web Site	www.medcemport.com.tr

YEŞİLYURT PORT

Port Features	
Administrator	Yeşilyurt Demir Çelik End. ve Liman İşl. A.Ş.
Coordinates	45° 15′ 14″ N - 36° 26′ 66″ E
Handled Cargo	General Cargo, Dry Bulk Cargo
Handling Capacity	
- Dry Bulk Cargo (Ton/year) General Cargo (Ton/year)	8.000.000
Total port area	210.000 m^2
Warehouse	115.000 m^2
Closed warehouse	33.000 m^2
Customs Bonded Warehouse	27.000 m^2
Auto park	2.000 m^2
Non Bonded Area	100.000 m^2

Berth-Pier Dimensions	
Length	950
Maximum Draft	20

Equipment List	Number	Capacity / Ton
MHC	13	15-180 Ton
Forklift	7	5-17 Ton
Excavator	6	130-240 HP
Loader	15	80-270 HP
Tracks	21	25-150 Ton

Contact Details	
Related Persons	Salih Cengiz, Port Manager
Address	Organize Sanayi Bölgesi Kutlukent - SAMSUN
Telephone / Fax	+90 362 266 43 55/ +90 362 266 55 62
E-mail	salihcengiz@yesilyurtliman.com
Web Site	www.yesilyurtliman.com

YILDIZ ENTEGRE PORT

YILDIZENTEGRE

Port Features	
Administrator	Yıldız Entegre Ağaç San. Tic. A.Ş.
Coordinates	40º 43,071 N - 029º 53,423 E
Handled Cargo	General Cargo, Bulk Cargo, Liquid Bulk
Handling Capacity	
Bulk and General Cargo (Ton/year)	1.000.000
Liquid Bulk (Ton/year)	200.000
Total Port Area (Customs)	9.721 m²

Berth-Pier Dimensions	
Length	275 m
Maximum Draft	18,50 m

Equipment List	Number	Capacity / Ton
Sennebogen 6200	1	64
Liebherr LHM 500	1	140
Liebherr LH 40	1	5
Atlas 350 TM	1	6
Sennebogen 835 M Special	1	8
Sennebogen 835 D Special	1	8
Sennebogen 835 R Special	1	8
Volvo L 120 Loder	1	
Volvo L 150 Loder	1	
Kalmar DCD 320 – 12 Forklift	1	32
TCM Forklift	1	10
Hyster Forklift	1	5

Contact Details	
Related Persons	R. Emre Yazıcı - M. Yasin Uygun
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Telephone / Fax	+90 262 280 79 01 / +90 262 280 79 03
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Web Site	www.yildizentegre.com

YILPORT GEBZE

Port Features	
Administrator	YILPORT Gebze Container Terminali ve Liman İşletmeleri A.Ş.
Coordinates	40° 46′ 3.76″ N - 29° 31′ 57.02″ E
Handled Cargo	Container, General Cargo, Dry Bulk Cargo
Handling Capacity	
- Container (TEU/year)	1.000.000
- General Cargo (Ton/year)	5.000.000
Total Port Area	345.000 m^2
Warehouse	1000 m^2 bonded temporary storege area 2000 m^2 unbonded warehouse
Customs Bonded Warehouse	4.400 m^2 Type A temporary storage area 2000 m^2unbonded warehouse
Customs Area (open)	237.000 m^2
Customs Area Warehouse (unbounded)	95.000 m^2

Berth-Pier Dimensions	
Length	1.455 m
Maximum Draft	30 m

Equipment List	Number	Capacity / Ton
STS	8	70
RTG	31	41
REACH STACKER	7	45
EMPTY HANDLER	3	8

Contact Details	
Related Persons	Remzi Cem Göktaş - Okan Özay
Address	Dilovası Organize Sanayi Bölgesi 1.Kısım Göksu Cd. No:18 Dilovası 41455 - KOCAELİ
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Web Site	www.yilport.com

YILPORT KÖRFEZ

Port Features

Administrator	Rota Liman Hizmetleri Sanayi Anonim Şirketi
Coordinates	40° 46′ 16″ N - 29° 43′ 23″ E
Handled Cargo	General Cargo, Dry Bulk Cargo
Handling Capacity (Ton/year)	4.000.000
Total Port Area	120.000 m²
Closed Warehouse	22.575 m²
Customs Warehouse (Open)	27.150 m²
Open Area	25.962 m²
Duty-free Indoor Area	8.672 m²

Berth-Pier Dimensions

Length	745 m
Maximum Draft	18 m

Equipment List

Equipment List	Number		Number
Linde Forklift (2,3,5,6 Ton)	15	Volvo L120 Loader	1
Clark Forklift (13,5 Ton)	1	Caterpillar 307 Excavator	2
Kalmar Forklift (20 Ton)	1	Caterpillar D4 Dozer	1
Bobcat Telehandler	1	Siwertell Halmstad Unloader (600 Ton/Saat)	1
Caterpillar 908 Loader	1	Siwertell Mega Unloader (400 Ton/Saat)	1
Caterpillar 914 Loader	1	Siwertell 10.000 S Unloader (350 Ton/Saat)	1
Caterpillar 930 Loader	2	Liebherr CBG Crane (30 M/30 Ton)	1
Volvo L110 Loader	1		

Contact Details

Related Persons	Remzi Cem Göktaş - Serhat Yiğenli
Address	Atalar Mah. Sahil Cd. Liman Mevkii Rota Limanı 41740 Körfez - KOCAELİ
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Web Site	www.yilport.com

ZEYPORT ZEYTİNBURNU LİMAN İŞLETMELERİ

Port Features	
Administrator	Zeyport Zeytinburnu Liman İşlet. San. ve Tic. A.Ş.
Coordinates	40° 58,8′ N - 028° 53,9′ E
Handled Cargo	Ferry/Passenger, Ro-Ro, General Cargo
Handling Capacity	180 Truck/Day (Ro-Ro Transportation)
Ro-Ro (vehicle/year)	65.700
Total port area	43.510 m^2
Warehouse area	1.441 m^2
Closed Warehouse	767 m^2
Customs Warehouse (temporary storage)	1.441 m^2
Customs Area	27.000 m^2

Berth-Pier Dimensions	
	5 X 112 m
	5 X Ro-Ro ramp
Length	112 m
Maximum Draft	Max. 7,00 m - Safe Berth: 6,00 m.

Equipment List	Number	Capacity
MHC	1	15 ton
Forklift	1	3 m/t
Forklift	2	5 m/t

Contact Details	
Related Persons	H. Muzaffer Ermiş, Recep Düzgit
Address	Sahil Kennedy Caddesi, Liman Sokak Zeytinburnu - İSTANBUL
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Web Site	www.zeyport.net

BIBLIOGRAPHY

BIBLIOGRAPHY

AEP Maritime Cybersecurity White Paper

AFAD (2017) “Türkiye’de Afet Yönetimi ve Doğa Kaynaklı Afet İstatistikleri”, 68 sf.

Akyıldız, H., & Gökozan, H. (2020). A conceptual model of port cybersecurity and threats: Knowledge and understanding. Journal of Traffic and Transportation Engineering (English Edition)

Alberts A. J.; (2006), Common Elements of Risk, Acquisition Support Program, Technical Research sponsored by the U.S. Department of Defense, ss 4-13.

Al-Mhiqani, M. N., Anbar, M., Alzain, M. A., & Abdullah, R. (2024). Maritime cyber security.ResearchGate.

Arslan, O., & Arslan, C. (2021). Impact of Spoofing of Navigation Systems on Maritime Situational Awareness. ResearchGate

Atlantic Council. (2021). Rising Maritime Cyber Threats: A Call for Operational Collaboration. Washington, DC: Atlantic Council.

Aytaç, S. (2011). “İş Kazalarını Önlemede Güvenlik Kültürünün Önemi” Türkmetal Dergisi, Cilt: 147

BajBai, S., Gupta, J.P. (2005). Site Security for Chemical Process Industries, Journal of Loss Prevention in the Process Industries 18: 301-309

BIMCO, ICS, IUMI, INTERTANKO & INTERCARGO. (2021). Cybersecurity Threat to Ports – Whitepaper. Published May 2021.

Blanchard, B.S.;(1998), System Engineering Management, 3rd Edition, John Wiley & Sons, New York.

Chiba, T., Shinichi A.and Takeshi K., “Research on Method of Human Error Analysis Using 4M4E”, JR East Technical Review, 5, (2005).

CISA – Cybersecurity and Infrastructure Security Agency. (2021). Understanding Vulnerabilities of Positioning, Navigation, and Timing (PNT).

CISA & TSA (2020), Port Facility Cybersecurity Risks Infographic

CISA & TSA (2020), Port Facility Cybersecurity Risks Infographic.

CISO Council. (2021). CISO Handbook. International CyberSecurity Center of Excellence (ICSCSI)

Cimpanu, C. (2018, July 26). COSCO Shipping Lines Hit by Ransomware Attack. BleepingComputer.

CoESS – Confederation of European Security Services. (2023). Manual – Maritime Security Personnel: Recommendations for Training, Qualifications and Working Conditions.

Dryad Global. (2022, June 2). Interview: Mitigating cyber-threats in the maritime industry.

ENISA – European Union Agency for Cybersecurity. (2022). Guidelines – Cyber Risk Management for Ports.

ENISA – European Union Agency for Cybersecurity. (2023, June). Good Practices for Supply Chain Cybersecurity

ENISA, Cyber Risk Management for Ports, 2022.

ENISA. (2022). European Cybersecurity Month 2022 Campaign Report.

European Union. (2023). Directive (EU) 2022/2555 (NIS2 Directive) on measures for a high common level of cybersecurity across the Union.

Europol. (2013). Drug traffickers use hackers to infiltrate port security systems. Europol Newsroom

Hurd, Barry. (2023). Port of Seattle Hacked: Is the Future Compromised? LinkedIn Articles.

IAPH, Cybersecurity Guidelines for Ports, 2021

Ilascu, I. (2018, September 21). Port of Barcelona Suffers Cyberattack. BleepingComputer.

ILO Safety and Health in Dockwork: 1997:6,7

IMO – International Maritime Organization. (2017). Resolution MSC.428(98) – Maritime Cyber Risk Management in Safety Management Systems. Adopted on 16 June 2017

IMO – International Maritime Organization. (2021). MSC-FAL.1/Circ.3/Rev.2 – Guidelines on Maritime Cyber Risk Management. Yayın Tarihi: 14 Mayıs 2021.

IMO (2018), Resolution MSC.428(98) – Maritime Cyber Risk Management in Safety Management Systems.

IMO, MSC-FAL.1/Circ.3/Rev.2, Guidelines on Maritime Cyber Risk Management, 2021

Institution of Engineering and Technology. Good Practice Guide: Cyber Security for Ports and Port Systems, 2020.

İnanır M. (2012) “Limanlarda Sınıf 1 Tip Tehlikeli Yüklerin Elleçlenmesinde Emniyet Yönetimi Uygulamaları” DEÜ. Sosyal Bilimler Enstitüsü. Yüksek Lisans Tezi

LRQA. (2022). NotPetya ransomware attack on Maersk: Key learnings. Yayın Tarihi: 4 Temmuz 2022.

Maersk. (2017). Maersk statement on the cyber-attack (NotPetya). A.P. Møller – Mærsk.

MarineDeal News. (2016). Denizcilik alanında siber güvenlik.

MarineDeal News. (2021, October 8). Gelişen teknolojinin sinsi düşmanı: Siber saldırılar.

Mierzwicki T. S., 2003. Risk Index for MultiObjective Design Optimization of Naval Ships, Faculty of Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Moore, M. (2021, September 23). Port of Houston Quells Cyberattack. Infosecurity Magazine.

NATO Maritime Interdiction Operations Training Center (NMIOTC), NMIOTC Journal, Issue 25, 2023

Nurduhan M. (2017). "Liman Tesislerinin Güvenlik Performansının Bulanık Mantık Yöntemiyle Ölçülmesi: Bir Liman Uygulaması" DEÜ. Sosyal Bilimler Enstitüsü. Yüksek Lisans Tezi

OT Insights Center. (2024). 2024 Threat Report – OT Cyberattacks with Physical Consequences.

OTORIO. (2022). 2022 - 2023 Cyberattacks on Operational Environments.

OTORIO. (2023). Mastering Security for OT Networks: Best Practices and Industrial Use Cases.

Özker, Uğur. (2022). Türkiye'de Kritik Altyapı ve Siber Güvenlik. İstanbul: Konrad-Adenauer-Stiftung Türkiye & EDAM Yayını

Port of San Diego. (2018, September 27). Port of San Diego Experiencing Disruption to Information Technology Systems. Official Statement.

SAFETY4SEA. (2023). Cyber attacks on maritime OT systems increased 900% in last three years. Yayın Tarihi: 5 Ekim 2023.

Sanger, D. E., Perlroth, N., & Bergman, R. (2020, May 18). Israel Hack of Iranian Port Is Latest Salvo in Cyberwar. The New York Times.

Secureframe. (2024). 30+ Risk Management Statistics You Need to Know in 2024.

Siber Güvenlik Kanunu, Kanun No. 7545, Kabul Tarihi: 12/03/2025, Resmî Gazete, Sayı: 32846, Yayım Tarihi: 19/03/2025.

Stormshield. (2023). Cybermarétique: A Short History of Cyberattacks Against Ports. Yayın Tarihi: 3 Temmuz 2023.

StormWall. (2023). DDoS Attack Report in APAC 2023.

Stouffer, K., Pillitteri, V., Lightman, S., Abrams, M., & Hahn, A. (2022). Guide to Industrial Control Systems (ICS) Security (NIST SP 800-82 Rev. 3). Gaithersburg, MD: National Institute of Standards and Technology.

T.C. Ulaştırma ve Altyapı Bakanlığı. (2023). Ulusal Siber Güvenlik Stratejisi ve Eylem Planı (2024–2028).

Tech Wire Asia. (2023). Why are DDoS attacks increasing in APAC? Yayın Tarihi: 15 Kasım 2023.

Tehlikeli yüklerin elleçlenmesi, nakliyesi ve depolanması kurs eğitim el kitabı, 2012:78

The Loadstar. (2022, February 22). Ransomware attack hits Nhava Sheva container terminal.

The Readable. (2023). Maritime cyber threats: Drug trafficking and supply chain security. Yayın Tarihi: 6 Aralık 2023.

TMMOB EMO. (2024). Kritik Alt Yapılar ve Siber Güvenlik – 2024/1 Haber Bülteni.

Tohumcu, Ö.K. ve Kazan H., (2019). "Uluslararası Gemi ve Liman Tesisi Güvenlik Kodu (ISPS Kod) Çerçevesinde Limanlarda Hazırlanan Diğer Güvenlik Planları ile Liman Tesisi Güvenlik Planının Entegrasyonu", Kara Harp Okulu Bilim Dergisi, Haziran 2019, 29 (1), 17-64.

Töz, A. C. and Köseoğlu, B., " Denizcilikte İş Sağlığı Ve İş Emniyeti: Limanlar Üzerine Genel Bir Değerlendirme", II. Ulusal Liman Kongresi, doi:10.18872/DEU.b.ULK.2015.0015, (2015).

Türkiye Büyük Millet Meclisi. (2025). Siber Güvenlik Kanunu, Kanun No: 7545, Kabul Tarihi: 12.03.2025, RG Tarih: 19.03.2025, Sayı: 32846.

TÜRKLİM. (2024). TÜRKLİM 2024 Sektör Performans ve Dijital Dönüşüm Raporu.

TXOne Networks. (2023). The Crisis of Convergence: OT/ICS Cybersecurity in 2023 – Annual Report

Ulusal Siber Güvenlik Stratejisi ve 2013-2014 Eylem Planı

Verma, Rahul. (2023). SCADA Security: Safeguarding Critical Infrastructure in Industrial Systems. LinkedIn Articles.

Verve Industrial. (2021). Network Segmentation in OT Environments: Why It's Essential for ICS Security.

Wang, J. (1998). A review of design for safety methodology for large marine and offshore engineering systems. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 212(4), 251-261

Zorba, Y. Kişi, H. (2009). "Uluslararası Deniz Ticaretinde Tehlikeli Yüklere İlişkin Emniyet Yönetimi ve Türk Limanları Üzerine Uygulama" DEÜ Denizcilik Dergisi, Cilt:1, Sayı: 1.

Web Siteleri

http://www.tuik.gov.tr/
https://alphaliner.axsmarine.com/PublicTop100/
https://porteconomicsmanagement.org/
https://unctad.org/publication/review-maritime-transport-2024
https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92
https://www.clarksons.net/n/#/portal
https://www.drewry.co.uk/
https://www.imf.org/en/Home
https://www.sea-intelligence.com/press-room/307-2024-schedule-reliability-largely-within-50-55
https://www.wto.org/

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