2. Korea's Shipbuilding Industry: Developments and Prospects Ahead[1]

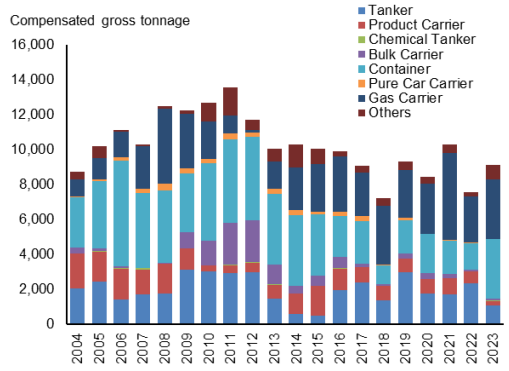
Since around 2020, the global shipbuilding market has been on an upturn on the back of robust global trade growth, ship replacement demand due to stricter environmental standards, and continued modernization of naval fleets amid geopolitical tensions. While this upturn, along with Korea's growing cooperation with the US shipbuilding industry, should help Korea propel ship constructions in the near term, several challenges lie ahead, including competition from Chinese shipyards, complexity in producing environmentally friendly vessels, and labor shortages.

Developments

1. Strong government support, particularly during the 1960s and 1970s, was instrumental in laying the foundation for Korea's shipbuilding industry. Before the 1960s, the industry had limited scope, focusing on repairing US warships. A pivotal moment came in the 1960s and 1970s on the back of the government's push to develop several capital-intensive heavy industries, which included shipbuilding.[2] Thanks to measures such as preferential lending rates, tax holidays, government guarantees for foreign loans, construction of specialized industrial infrastructure, and establishment of research institutes, Korea's shipbuilding expanded steadily throughout the next few decades, becoming one of the country's key export engines by the turn of the millennium.

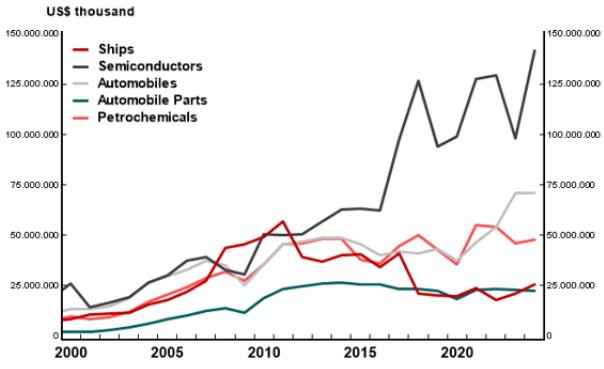
2. Korean ship exports rose rapidly from 2000 to the early 2010s, when the country became the world's largest shipbuilder. Strong global trade growth in the 2000s and Korean shipbuilders' reputation for quality and advanced technology helped the industry grow robustly, with large containers and gas carriers such as liquefied natural gas (LNG) and liquefied petroleum gas (LPG) carriers constituting the lion's share of ships constructed (Figure A2.1). At its peak in 2011, shipbuilding overtook semiconductors as the country's top exports, and Korea secured most of the global LNG carrier orders (Figure A2.2).

Figure A2.1. Ships Constructed



Source: Korea Maritime Institute; CEIC; AMRO staff calculations

Figure A2.2. Key Export Items



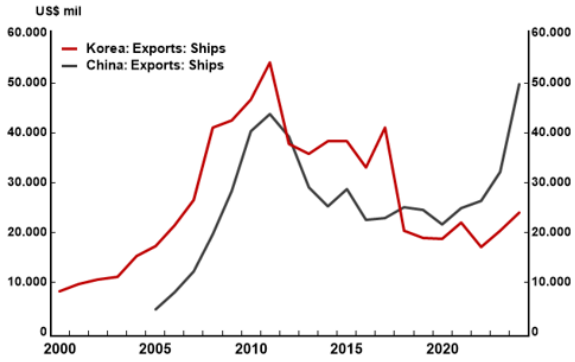
Source: MOTIE; Haver; AMRO staff calculations

3. Since 2011, Korea's ship exports began to decline on the back of a global shipping market downturn following the Global Financial Crisis (GFC) and China's rapid rise in shipbuilding capacity. In the aftermath of the GFC, a slump in global trade

[1] Prepared by Jade Vichyanond, Senior Economist
[2] One of the key initiatives was President Park Chung-hee's Heavy and Chemical Industry (HCI) project in 1973, which aimed to provide comprehensive support for six industries identified as fundamental for Korea's development: steel, non-ferrous metals, machinery, shipbuilding, electronics, and petrochemicals.

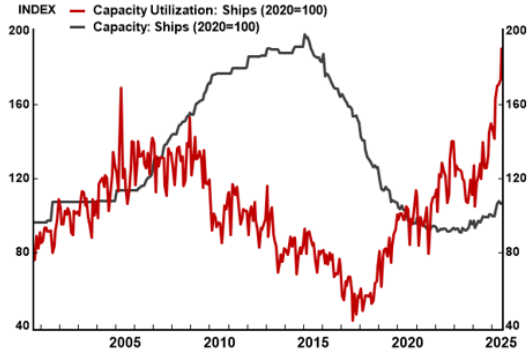
precipitated a downturn in ship demand worldwide. While ship exports of major shipbuilding economies declined, China employed various tools to resuscitate the industry, ranging from government support to corporate strategies (e.g. competitive pricing and rapid delivery), which enabled it to overtake Korea in ship exports by the late 2010s (Figure A2.3). Meanwhile, in response to competition from China and subdued global demand, extensive consolidation took place in Korea's shipbuilding industry in the form of mergers, bankruptcies, and government-led restructuring efforts, as reflected in a sharp drop in shipbuilding capacity (Figure A2.4). In the process, Korea started to focus even more on high-value ships, such as LNG and LPG carriers and other types of eco-friendly ships.[3]

Figure A2.3. Ship Exports: Korea and China



Source: General Administration of Customs; Haver; AMRO staff calculations

Figure A2.4. Shipbuilding Capacity and Utilization Rate



Source: Statistics Korea; Haver; AMRO staff calculations

Prospects Ahead

4. Since around 2020, the global shipbuilding market has been on an upturn—driven by robust global trade growth, ship replacement demand due to stricter environmental standards, and continued modernization of naval fleets amid geopolitical tensions—which should help support Korean shipbuilding in the near to medium term. With maritime transport being responsible for about 90 percent of world freight, the post-pandemic rebound in global trade has helped support demand for container ships, bulk carriers, and tankers. Meanwhile, ship replacement demand due to increasingly stricter environmental standards—some of the key environmental regulations are those set by the International Maritime Organization (IMO), such as the Energy Efficiency Design Index (EEDI), the Energy Efficiency Existing Ship Index (EEXI), and the Carbon Intensity Indicator (CII)—is supporting demand for advanced eco-friendly ships, such as dual-fuel vessels that rely on ammonia and hydrogen (Table A2.1). Lastly, sustained geopolitical tensions underscore the need for continued modernization of defense forces, including naval fleets. The current upturn in global ship demand is reflected in the recovery of Korea's shipbuilding industry, with the bulk of outstanding orders being for high-value vessels such as LNG carriers (Figure A2.5).

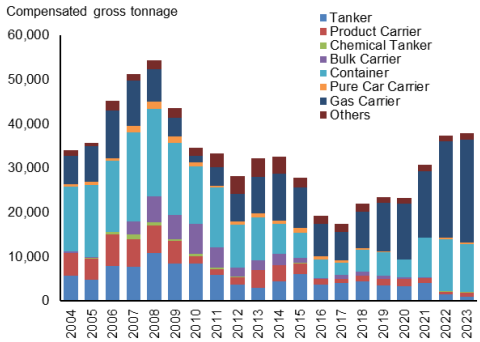
[3] LNG and LPG carriers are dual-fuel vessels by design and are thus considered eco-friendly, although not as eco-friendly as those using ammonia and hydrogen.

Table A2.1. Key Environmental Standards Set by the International Maritime Organization

Regulation	Details
Energy Efficiency Design Index (EEDI) (effective 2013)	• Promotes the use of more energy efficient equipment and engines for the design of new ships • Requires a minimum energy efficiency level per capacity-mile (e.g. ton-mile) for different ship type and size segments
Energy Efficiency Existing Ship Index (EEXI) (effective 2023)	• Similar to EEDI but applies to existing ships
Carbon Intensity Indicator (CII) (effective 2023)	• Operational indicator for energy efficiency

Source: IMO; AMRO staff compilation

Figure A2.5. Outstanding Ship Orders



Source: Korea Maritime Institute; CEIC; AMRO staff calculations

5. In addition, cooperation with the US presents another significant opportunity for Korean shipbuilders. In late July 2025, as part of the trade negotiations with the US, the Korean government announced the "Make American Shipbuilding Great Again" (MASGA) initiative, a $150-billion fund—in the form of investments, loans, and guarantees—to revive the US shipbuilding industry. According to the plan, Korean shipbuilding companies will expand their presence in the US—by setting up new shipyards and modernizing existing ones, training the US workforce, re-establishing supply chains, and conducting maintenance, repair, and overhaul (MRO), among others—in both commercial and military shipbuilding.[4] Furthermore, even before the MASGA announcement, major Korean shipbuilders had been investing in the US over the past few years, leveraging Korea's expertise to expand their footprint on US soil.[5]

6. The industry however faces a number of key challenges at this juncture, including competition from Chinese shipyards, complexity in producing environmentally friendly vessels, and labor shortages. First, China is rapidly closing the technological gap in high-value ship segments currently dominated by Korean shipbuilders, and this domination is for the most part only due to Korea's superior technology in fuel efficiency. In addition, China's cheaper labor costs make it challenging for Korean companies to compete, particularly in an industry as labor-intensive as shipbuilding. Second, increasing regulatory pressure globally is placing higher premium on environmentally friendly vessels, which are generally more technologically complex and hence more costly to produce. Lastly, the Korean shipbuilding industry faces a shortage of skilled labor since 2010, when supply gluts and corporate mismanagement have led to large-scale layoffs. As a result, the industry is left with an aging domestic workforce and faces challenges in attracting young workers, which are increasingly turning away from "3D" (difficult, dangerous, and dirty) work such as construction and shipbuilding.

7. Looking ahead, strategic investment in certain segments and addressing labor-related issues will be essential in safeguarding the future of Korean shipbuilding. In the LNG carrier segment, other than fuel efficiency, it is vital that Korea continue to develop other technical aspects of LNG carriers to maintain competitiveness, such as cargo hold (i.e.

[4] Military vessels include naval warships, diesel-electric submarines, semi-submersible ships and unmanned surface vessels.
[5] Hanwha acquired Philly Shipyard in June 2024 and so far has secured three MRO contracts for US Navy ships. In April 2025, HD Hyundai announced a partnership with Huntington Ingalls, the largest American defense shipbuilder, to improve shipbuilding productivity and advance the digital transformation of shipyards. Two months afterward, HD Hyundai announced a cooperation with Edison Chouest Offshore to build LNG dual-fuel containers.

how to securely hold, insulate, and transport heavy, extremely cold LNG).[6] Second, given rising ship replacement demand due to increasingly stringent environmental standards, Korea should continue allocating resources to further development of dual-fuel vessels, particularly ammonia- and hydrogen-based dual-fuel vessels. In developing such technology, ongoing support from the government such as the KRW2-trillion "K-Shipbuilding Super Gap Vision 2040" public-private initiative is crucial, especially in view of substantial government support received by shipbuilding industries in competitor countries. As far as manpower is concerned, Korea has made substantial progress in automating its shipbuilding industry—recently, the industry has successfully showcased robots performing deck welding, one of the most challenging tasks to automate due to uneven surfaces and obstacles such as pipes—and should continue to invest in labor-saving technologies given the increasing urgency of manpower shortage. Lastly, it is vital that the authorities periodically calibrate foreign worker restriction policies to be in line with the industry's demands—in this regard, the recent removal of a separate quota for shipbuilding within the E-9 foreigner worker visa category may need to be reviewed to minimize labor supply shortage in the industry.

[6] The current gold standard for cargo hold technology in LNG carriers is one developed by a French firm and used by almost all Korean and Chinese shipbuilders.