

Shipbuilding – International Regulatory and Policy Environment

South Korea

South Korea has been a global leader in shipbuilding since 2003, when it outpaced Japan and European countries who dominated the industry for centuries. Today, it is home to seven of the world's ten largest shipbuilding companies. The shipbuilding industry remains as major contribution to the Korean export sector. The growth of Korean shipbuilding can be attributed to the government strategies that included capital funding, supportive policies and facilitation of joint ventures with international companies to access latest technologies.

Governments in all major shipbuilding nations' play a vital role in development of the sector by providing direct subsidies, easy financing, preferential orders, etc. The sector is dependent on the government owing to requirements of huge capital investments, and sensitive nature because of national security and large employment generation capacity. South Korea's shipbuilding industry has also grown on the back of government support since inception. After gaining independence in 1948, the South Korean government established the Korea Shipbuilding and Engineering Corporation (KESC). The Government further acted to allocate capital, expand facilities and facilitate imports of ship components.

The Park Chung Hee regime (1961-1979) initiated the industrialization process of South Korea after the military coup of May 1961. The Heavy and Chemical Industrialization (HCI) promotion policy was adopted, which necessitated a huge amount of capital that was acquired via foreign loans, especially from the U.S. and Japan. The shipbuilding sector was provided a thrust under the HCI policy. The HCI drive provided shipbuilding and other preferred sectors with (i) capital incentives, (ii) complementary investments, (iii) trade incentives, and (iv) tax holidays. The capital incentives included preferential rates from state-owned banks with low nominal rates. A related method for securing access to capital was government guarantees for foreign loans. (The Foreign Capital Inducement Law states that the South Korean government would repay the loans to foreigners if the loans defaulted). The second category of incentives was the government complementary investments which included large infrastructure programmes for new facilities. The government invested in industrial complexes for shipbuilding at Ulsan, Okp'o and Chukdo. Also of great importance was the promotion of the steel industry through the state-owned Pohang Iron and Steel Corporation (POSCO). The shipbuilding industry gave POSCO increased economies of scale and POSCO gave the shipbuilding industry steel as a vital input at comparatively low prices.

The South Korean shipbuilding grew exceptionally during 1970 to 1990, a period that was marked with severe crisis in world shipping and shipbuilding, witnessing massive yard closures in Europe. By 1990, the Western European merchant ship completions had been reduced from more than twelve million gross register tons (grt) in 1975 to less than three million grt in 1990 (reduction of almost 75%). The South Korean completions on the other hand multiplied by a factor of more than eight over the same period.

Hyundai (HHI), a large business conglomerate, was instrumental in the rise of South Korea's shipbuilding, which it achieved with the support of the government. The state supported HHI by (i) giving access to domestic and foreign funds with preferential interest rates; (ii) helping in obtaining and providing financial guarantees for the first order; (iii) making complementary investments in facilities and complementary industries, such as steel through the Pohang Iron and Steel Company (POSCO); and (iv) providing support for acquiring new technologies. HHI became the major shipbuilder in South Korea in the 1970s and became the world's leading shipbuilder in 1983, a position it still holds today. Similarly, state support has helped in development of other shipbuilding players like Daewoo and Samsung.

By the mid-1980s, South Korea had become the most important competitor to the Japanese in the high-volume shipbuilding market, which was in-part contributed by the appreciation of Japanese yen that improved South Korea's competitiveness as against Japan.

The Shipbuilding sector held a priority status in the government's economic development agenda and has been provided special thrust in various five year plans of the South Korean government. A summary of government support to the sector during various plan periods is provided in the table below.

Plan period	Key objectives/ measures
Third Five Year Development Plan (1972-76)	<ul style="list-style-type: none"> • South Korea to be self-sufficient in vessels by 1980. • Shipbuilding exports to reach 1 billion USD by 1980 (3.2 million grt) and 2 billion USD (6.2 million grt) by 1985. • Nine shipyards to be constructed by 1980 and a further five by 1985.
Fourth Five Year Development Plan (1977-81)	<ul style="list-style-type: none"> • Commencement of the production of shipping components domestically • Development of the Planned Shipbuilding Program, which gave guidelines to the shipbuilding sector. Much of the finance of the shipbuilding sector to come from the National Investment Fund and foreign loans. • Government procurement to overcome depressed international shipping markets. • Increased focus on replacing the imports of ships with South Korean-built ships

The Korean economy was affected by the financial crisis of 1997 that was triggered by the poor performance and high debt ratios of some large conglomerates. The crisis led to a fall in real GDP, high inflation, three times rise in unemployment and depreciation in Korea's currency (won). Thus, the government initiated market based reforms aimed at the financial, corporate and public sectors. In December 1997, Korea shifted from a managed to a free floating exchange rate system and since then has pursued exchange rate stabilization. Disbursements from multilateral institutions and foreign investment inflows enabled Korea to rebuild quickly its international reserves, which had been depleted by the crisis, thus helping to restore confidence in the economy. The investment regime was also liberalized by removing nearly all barriers to incoming FDI. Liberalization of the investment regime together with

regulatory and other market-based reforms has contributed to a considerable expansion in foreign investment.

Additionally, the Korean government has taken active measures such as cutting corporate taxes and reducing the trademark evaluation period, to stimulate FDI through deregulation and by enhancing vehicles for investment promotion. Furthermore, the government has made considerable efforts to solicit foreign investors' opinions and incorporate their suggestions into its policies. The Invest Korea Plaza and the G4F website (www.g4f.go.kr) which were set up in 2006 are good examples of the government's efforts to provide one-stop administrative services to foreign investors.

There are multiple industry associations to facilitate growth and development of the shipbuilding sector. KOSHIPA is the leading shipbuilding association, enhancing cooperation amongst members and promoting their common interests, with membership covering all the major shipbuilders. Other key shipbuilding industry associations include Korea Marine Equipment Association (KOMEA) and the Korea Shipbuilding Industry Cooperative (KOSIC). A host of specialized institutions such as the Korea Marine Equipment Research Institute (KOMERI) and the Society of Naval Architects of Korea (SNAK) are more focused on R&D activities and production innovation. The Government's strong push to promote University-Industry R&D activities in the 80s resulted in many collaborative initiatives. More recently the Ministry of Knowledge Economy, has been pushing for the convergence of shipbuilding and IT sectors to support the "Smart Ships" agenda.

The trade regime of Korea is also liberal. Tariff protection for ships ranges from zero to 8%. The shipping industry has also benefited from government subsidy (Local Tax Reduction for Building and Acquisition of International Line Vessels and Deep Sea Fishing Vessels) that promoting the shipping industry by relieving the tax burden on international line vessels, deep-sea fishing vessels and coastal line vessels.

Korea's industrial vision for 2010 is to become one of the world's top four "industrial superpowers", based on strengthening its global position in the traditional basic industries of semi-conductors, cars, petrochemicals, steel, machinery, and shipbuilding. The government policies are thus directed at improving competitiveness and developing high-value-added advanced technology products based on innovative strategies.

Japan

Japan has held a leading position in the global shipbuilding industry since 1970s and has thus played a major role in shaping the worldwide development of the industry. Being an island nation, shipping is an essential activity for both domestic and international trade, and a strong shipbuilding industry provides a solid foundation not just for the shipping industry but also for the economy as a whole. Japanese shipbuilding industry's core products include oil tankers, bulk carriers and container ships; which comprise majority of world's fleet today.

The history of the Japanese shipbuilding industry and the government's role in the development of this industry can be traced to the Meiji period (1868 to 1912), when the government gave orders for ships and large military carriers to compete with European and American maritime carriers. In 1896, the Navigation

Promotion Law and the Shipbuilding Promotion Law were created that provided strong incentives to build and operate faster and larger ships. Japanese maritime carriers and shipbuilders depended heavily on subsidies provided by these laws.

Post the Meiji restoration period, Japan's modern shipbuilding started with private sector being given a greater role. However, during World War II, the industry was brought under government control and ships were built largely for military use. The war defeat had left the Japanese shipbuilding industry also weak. To aid recovery, Japan began deregulation of industry by returning to private administration and adopted a liberal monetary policy; the interest rates were deliberately kept very low and stable and Banks were lenient in the disbursements of loan, generally providing 'overloan' and allowed deferment of loan. These measures helped in meeting the businesses' need for capital investment, especially the heavy industrial sectors like shipbuilding that have huge capital needs. Other forms of special supports for the shipbuilding industry included various tax benefits, and financing through the Ex-IM Bank and the JDB. Thus, 1950s & 60s witnessed a rapid growth in Japanese commercial shipbuilding industry. These government subsidies were continued for most of the 1960s, and by 1970 shipbuilding in Japan became highly competitive in world markets.

However, in the 1970s and 1980s the shipbuilding industry suffered from two recessions, leading to lower demand from domestic market and thereby created huge excess capacities with the private players in the industry. Thus, the companies were compelled to look at export market and take orders from foreign countries. The government assisted the industry by introducing export promotion policies, such as the link system, by which the losses caused by unprofitable orders were made up by profits gained from the import of raw sugar. The government had already adopted trade liberalization policy in the 1960s, with a view to strengthen industry's international competitiveness. Accordingly, a long-term vision for industrial structure was adopted wherein two criteria for an optimum industrial structure were introduced: (1) "Income Elasticity Criteria" on the demand aspect; and (2) "Productivity Increase Rate Criteria" focusing on the supply side. Applying these criteria, the path of heavy and chemical industries was chosen as the most desirable.

The 1990s period has been fraught with heavy competition from the South Korean and Chinese shipbuilding industries. As a result, Japan has continuously focused on innovation to create new demand. The key R&D measures include creating replacement demand by developing environmentally friendly and safer ships, and development of new demand for shipbuilding industry by research and development of new technology, such as super large floating structures.

Japan's innovative R&D programmes in Shipbuilding

The following R&D programs have been undertaken:

a) **Super Eco-Ship** is an innovative ship design with a gas turbine and a contra-rotating podded propulsor driven by electric motors. Super Eco-Ship is environmentally friendly with CO₂ emissions three quarters of conventional coastal ships; NO_x one tenth; and SO_x two fifth. It also is economically improved with 20% more on-board cargo capacity and 10% greater overall efficiency. On-board working environment will be improved with significant noise reduction and on-board maintenance-free engines. Vessel manoeuvrability and controllability will be significantly improved. Its ability to move laterally makes

approaching to, and moving away from, the pier easy. It is expected that the development and commercialisation of Super Eco-Ship will revitalize the coastal shipping industry, help to accelerate a modal shift to coastal shipping and contribute to a reduction of environmental load imposed by transportation. Embarked on in 2001, the Super Eco-Ship R&D program has already resulted in new technologies that prepare for the modal shift to support commercialization of Super Eco-Ship. Currently NMRI (National Maritime Research Institute) is developing an optimal hull form design manual and on operation manual. Prototypes of Super Marine Gas Turbine and contra-rotating podded propulsor were installed on a demonstration ship, which is now undergoing actual sea trials.

b) **Mega-Float** is a very large floating structure developed in Japan. It is earthquake resistant and environmentally friendly. After evaluating a floating airport model of 1,000m in length, the feasibility of constructing a floating airport using Mega-Float technology was demonstrated. Other uses for Mega-Float technology have also been assessed. Mega-Float's feasibility as a reliable and inexpensive data backup facility is also demonstrated in a joint demonstration project with the Ministry of Internal Affairs and Communications and the Ministry of Economy, Trade and Industry. In addition to airports and facilities for data backup, various applications such as port facilities, container terminals, energy facilities and leisure facilities, are under consideration. We are actively promoting commercialization of Mega-Float.

Source: OECD

Skill development

One of the competitive edges of Japanese shipbuilding industry lies in its excellent human resources. Recognising the importance of skilled workforce in this industry, the government has taken efforts towards skill development. In 2004, in partnership with shipbuilding related organizations, the Shipbuilding Skill Development Center was founded within CAJS (The Cooperative Association of Japan Shipbuilders). The centre commenced to develop training material and prepare necessary equipment to support training efforts to be held at regional shipbuilding industry canterers. Intensive training programs were launched in Innoshima and Imabari in FY 2004, in Higashinippon and Oita in FY 2005. In addition, a training program for trainers was started, and teaching materials for on the job training (OJT) has been developed and now are supplied to shipyards.

Environmental protection

As one of the major shipbuilding countries, Japan actively participates in international discussions of environmental issues and international regulations. Japan is an active participant in the discussion of Ship Recycling in the IMO. Japan has been leading the international discussion for establishing a framework to maintain recycling capacity in the world, and at the same time to foster an environmentally friendly and safe ship recycling industry. To this end, the Ship Recycling Review Commission was established by Ministry of Land, Infrastructure and Transport. It consists of experts on shipbuilding, shipping and the environment and is conducting a comprehensive study on ship recycling, and developing strategic approaches in international organizations to facilitate the establishment of a globally-applicable instrument.