Research article[1]

Import Substitution in Shipbuilding: A Path to Economic and Political Security or a New Stage in the Rapid Growth of the Industry's Competitiveness in the Global Arena

Ksenia Yuryevna Zudinova
Saint Petersburg State University of Economics, 191023, Saint Petersburg, Sadovaya St., 21
Director of Foreign Economic Activity, FMS Dockyard, Safir Flowers Building, Al Khalidiyah, P.O. Box 29770, Abu Dhabi, UAE
E-mail: Ksenia.zudinova@gmail.com

Received: 19.01.2025; Accepted: 12.06.2024;

Abstract

The article examines state support measures for the shipbuilding industry aimed at quickly reducing dependence on foreign equipment supplies and provides examples of the implementation of the shipbuilding import substitution program, including the participation of research institutes working jointly with the real sector of the industry.

Keywords: shipbuilding, shipbuilding development, import substitution, Russian Federation, protectionism, state support of shipbuilding

Introduction

At present, programs are being developed at all levels of state, municipal, and business administration to organize the production of goods similar to those previously imported and now prohibited from import. Even the most developed economies produce various products using cooperative network structures, retaining only exceptional competencies.

To implement the anti-crisis plan, according to the Decree of the Government of the Russian Federation dated January 27, 2015, No. 98-r, various sectoral import substitution programs were developed, including in shipbuilding, formalized in the Order of the Ministry of Industry and Trade of the Russian Federation of March 31, 2015, No. 661 "On the approval of sectoral action plans for import substitution in the shipbuilding industry of the Russian Federation."

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Shipbuilding is a complex and lengthy process that involves the supply of a large range of components. Previously, most of these components were manufactured abroad. As part of the import substitution program, some foreign components were quickly replaced with domestic ones, but most products, especially in the field of electronics, require serious long-term development to fully replace foreign production.

In civilian shipbuilding, the share of imported components accounts for up to 80% of the total (Vesti morskogo Peterburga, 2014). Reducing the dependence of domestic shipbuilding on foreign products is planned to be achieved in the near future through the implementation of state and federal targeted programs, funded by budgetary and extra-budgetary resources, including business participation.

A Brief History

The idea of import substitution is not new globally. In the 1920s, most Latin American and African countries, seeking to reduce dependence on European states, pursued a policy of widespread industrialization. The Soviet Union also serves as an example of a largely autonomous economic system. As a result of import substitution programs, the share of industry in GDP grew significantly. From 1927 to 1965, in Argentina it rose from 24% to 34%, and in Brazil from 1939 to 1968—from 19% to 28% (Korabel.ru, n.d.). This process was facilitated by special investment conditions, protectionist measures, state subsidies, concessional lending, and more. The goal was to replace imports with domestic production while maintaining the quantity and quality of the assortment. Similar efforts were carried out in China. However, the results did not always justify the means, as product quality and variety often lagged behind imports. Thus, it is important to consider the experience of other countries when implementing an active import substitution policy to avoid mistakes and achieve high-quality output.

Another crucial factor is the sales market. With a sharp increase in shipbuilding output, the domestic market may not be able to absorb large production volumes, which is particularly relevant for Russia's shipbuilding sector.

Paths of Import Substitution

Two strategies for import substitution in shipbuilding can be identified:

1. An open path of integration into the global economy by expanding horizontal ties.
2. A closed path of exclusion from the global economic space, creating vertical relations.

The first path is more suitable for small countries without sufficient capacities to isolate themselves from global economic actors, making horizontal integration the only viable approach. The second path implies isolation, as followed by the USSR and North Korea.

Both approaches have advantages and disadvantages. Based on international and Soviet experience, Russia should adopt a more flexible import substitution program, oriented primarily toward high-quality final products. Western experts also argue that European and U.S. sanctions will have a long-term positive impact on Russia's economy by stimulating active import substitution. According to *The Global Competitiveness Report 2015–2016*

(Schwab, 2015), Russia, despite its relatively low competitiveness ranking, has strong chances of emerging from recession due to its active import substitution programs.

State Programs of Import Substitution

The Ministry of Industry and Trade developed and approved sectoral action plans for import substitution in various industries, including shipbuilding. On March 31, 2015, Order No. 661 was issued "On the approval of sectoral action plans for import substitution in the shipbuilding industry of the Russian Federation" (Minpromtorg, 2015).

This document outlines projects scheduled until 2022, with 2020 as an interim milestone. The main focus areas include:

- ships of specific classes and categories;
- low- and medium-speed diesel engines;
- complexes of special deck mechanisms for fishing vessels;
- multifunctional deck mechanisms (cranes, winches, including for offshore vessels and platforms);
- collective life-saving appliances (lifeboats, rafts, launching and release devices).

At the time of adoption, the share of imports in large-capacity transport ships, turbochargers for hybrid diesel-reduction installations, and propeller-rudder columns was 100%. By 2020, the planned maximum import share for these categories should be reduced to 20–60%.

The sectoral plan highlights the most vulnerable areas of shipbuilding, requiring special attention for developing domestic analogues.

In Saint Petersburg, the Import Substitution and Localization Center was established—the first and, so far, the only congress and exhibition platform in Russia aimed at supporting the practical implementation of state import substitution programs (Importnet.ru, 2016). The center operates under the Committee on Industrial Policy and Innovation of Saint Petersburg and works in four areas: exhibitions, business events, creation of an analytical database of customers and suppliers, and dissemination of information about the center and its residents.

Import Substitution in Real Production

Import substitution has already been applied at shipbuilding production sites across Russia. Although still at an early stage, the program is leading to the use of Russian components and materials.

For instance, the *Severnaya Verf* shipyard, Russia's leading producer of surface ships, works exclusively with domestic metal suppliers, with tenders open to all Russian companies (*Sudostroenie.info*, 2016). Another success story is the *Zvezdochka* shipbuilding center, which developed and launched production of a thruster with over 500 kW capacity. The first unit was delivered to the Nevsky Shipbuilding and Ship Repair Plant in January 2016. By 2020, Zvezdochka plans to fully meet domestic demand for thrusters and propeller-rudder columns for all vessel types (*RUEconomics*, 2016).

However, not all sectors achieve rapid substitution. Welding, a key shipbuilding process, is still carried out with imported equipment. Some devices have no Russian analogues, making replacement impossible for now. Approximately 20 models of welding equipment are tested annually, with successful ones adopted in production. Still, many shipyards prefer foreign machines due to their flexibility in frequent readjustments (*Morskoy biznes*, 2016). Experts suggest that robotics would be the most cost-effective solution, but automation in Russia is progressing slowly.

Import Substitution in Science

The Krylov State Research Center prepared proposals for localizing shipbuilding components, planning to launch production of over 600 units by 2020. Engines remain the most problematic due to their complexity, though development is underway at Zvezda, Penzadieselmash, and others. Budget constraints pose challenges, yet cooperation between research centers and industry continues, such as between the United Shipbuilding Corporation and the Kurchatov Institute, which are jointly creating innovative materials and software for shipbuilding (Minpromtorg, 2016).

Prospects of Import Substitution

Any well-designed import substitution program can become export-oriented in the future. For example, the Pella shipyard acquired the bankrupt German shipyard Sietas, while the Kirov Plant bought German firms in petrochemicals and construction materials to enter foreign markets.

When developing step-by-step substitution programs, shipowners' opinions must be considered, as they provide lists of approved manufacturers and influence equipment choices for new ships.

Conclusion

Alongside procurement of ship equipment, Russia must pursue global-level research and development projects, particularly in engines, multifunctional deck mechanisms, and life-saving equipment. In the current sanctions environment, the country faces two paths: importing technologies from non-sanctioning states or developing all products domestically. Either path must balance economic efficiency with national security.

Priority should be given to developing advanced technologies, composite materials, and extending ship systems' service life. Achieving this requires cooperation among the state, business, research institutes, and universities. Only a comprehensive and economically sound combination of approaches will allow Russia to build an optimal import substitution program.

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