

DEVELOPMENT

OF ADAPTIVE MECHANISMS OF FORCED IMPORT SUBSTITUTION FOR SUSTAINABLE GROWTH

DESARROLLO DE MECANISMOS ADAPTATIVOS DE SUSTITUCIÓN FORZADA DE IMPORTACIONES PARA EL CRECIMIENTO SOSTENIBLE

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ABSTRACT

This study explores the development of adaptive mechanisms of forced import substitution as a pathway to sustainable growth in the context of systemic transformations and external restrictions. The purpose is to conceptualize forced import substitution as both a protective measure and a strategic instrument that enhances resilience and competitiveness. The methodology relies on theoretical analysis of existing interpretations combined with a systematic approach to evaluating macro and meso level dynamics, including risks associated with sanctions, supply chain disruptions, and technological dependence. The results demonstrate that adaptive mechanisms such as diversification of supply sources, expansion of domestic production capacity, and advancement of technological sovereignty contribute to structural stability and reduce vulnerability to external shocks. The conclusion highlights that forced import substitution, when integrated into long term development strategies, supports economic resilience and sustainable growth while reinforcing national competitiveness in conditions of global turbulence.

Keywords: Sustainable development, Forced import substitution, International supply chains, Regional aspects of import substitution, Macro- and meso-dominants.

RESUMEN

Este estudio explora el desarrollo de mecanismos adaptativos de sustitución forzada de importaciones como vía para el crecimiento sostenible en el contexto de transformaciones sistémicas y restricciones externas. El propósito es conceptualizar la sustitución forzada de importaciones como medida de protección y como instrumento estratégico que mejora la resiliencia y la competitividad. La metodología se basa en el análisis teórico de las interpretaciones existentes, combinado con un enfoque sistemático para evaluar la dinámica a nivel macro y meso, incluyendo los riesgos asociados a sanciones, interrupciones en la cadena de suministro y dependencia tecnológica. Los resultados demuestran que mecanismos adaptativos como la diversificación de las fuentes de suministro, la expansión de la capacidad

productiva nacional y el avance de la soberanía tecnológica contribuyen a la estabilidad estructural y reducen la vulnerabilidad a las perturbaciones externas. La conclusión destaca que la sustitución forzada de importaciones, al integrarse en estrategias de desarrollo a largo plazo, promueve la resiliencia económica y el crecimiento sostenible, a la vez que refuerza la competitividad nacional en condiciones de turbulencia global.

Palabras clave: Desarrollo sostenible, Sustitución forzada de importaciones, Cadenas de suministro internacionales, Aspectos regionales de la sustitución de importaciones, Dominantes macro y meso.

INTRODUCTION

In 2015, the United Nations released the report "Transforming our World: the 2030 Agenda for Sustainable Development" (United Nations, 2015), which proclaimed 17 strategic objectives defining a new development agenda based on achieving sustainable development goals. This agenda emphasizes comprehensive and balanced development, combining economic, social, and environmental goals as a new paradigm of well-being. A key doctrine of the report is the principle of equality among these three components, without prioritizing one over the others in the implementation of state policy. Shifting emphasis toward any single component in addressing the strategic goals of national policy undermines the very concept of sustainable development. However, under the conditions of turbulence in the global economy, the principles of this concept may be disrupted by an unfolding competitive struggle, such as sanctions, tariff wars, etc. As a result, significant risks emerge that may threaten sustainable development trajectories.

Thus, it becomes necessary to mitigate risks and adapt national socio-economic systems to the new institutional and situational agenda. Otherwise, national economies facing external restrictions risk developing structural distortions as a result of disruptions in international supply chains. This not only undermines the previously established reproduction processes but also worsens the quality of life due to constraints on the supply of both industrial and consumer goods.

With a certain degree of confidence, it can be argued that the implementation of the sustainable development concept at the level of an individual country must take shape under the conditions of systemic transformation with due regard to the development of adaptive mechanisms in response to changes in external markets. In this context, the study of the import substitution economy is becoming a priority task within the sustainable development concept,

particularly due to ongoing geoeconomic and geopolitical shifts. Building on this approach, the following section presents a substantive analysis of the forced import substitution economy in the context of the tasks outlined above.

In the field of scientific research, the study of the import substitution economy is a priority. At the same time, most studies focus not on the fundamentals of import substitution policy, but rather on its situational aspects, concentrating primarily on specific practical issues.

Despite the apparent clarity of the concept of import substitution (reducing the economy's dependence on imports and stimulating domestic producers), many components of this category require detailed interpretation at both the macro- and meso-levels. Debates arise from the interpretation of the category to its functional characteristics (time horizons, boundaries, feasibility, etc.). These aspects necessitate a deeper theoretical understanding of the methodology for studying import substitution, particularly within the paradigm of sustainable development. This would not only allow us to move closer to a comprehensive picture of the category's content but also to subsequently develop practical approaches to state regulation in this sphere that are adapted to a dynamically transforming foreign economic agenda and, ultimately, to the implementation of the key principles of sustainable development (Karpov, 2022; Prodchenko, 2021).

Considering these directions, it seems advisable to systematize the scientific approaches to interpreting the conceptual framework, as well as to adapt and refine current models and methodological approaches to import dependence and the implementation of import substitution policy.

These aspects call for dedicated research into the development of the theoretical and methodological framework in this scientific field. In a nutshell, import substitution should be understood as the implementation of state economic policy aimed at ensuring sustainable and globally competitive development of national and regional economic systems within the context of a transforming geoeconomic agenda. It also entails the creation of conditions for the structural organization of reproductive processes that support the growth of domestic production, including under dynamically emerging external constraints.

This definition is provisional and should be presented in a more systematic form, considering the established theoretical approaches to interpreting this category. The first category views import substitution as a mechanism for enhancing the competitiveness of the national economy within the global economic system. The second approach

rests on the position that import substitution should be understood as a mechanism for strengthening the competitiveness of local producers under the conditions of external competition. The third approach interprets import substitution as a forced measure undertaken by the state in response to external sanctions (Bussell, 2023; Connolly & Hanson (2016)., Dong et al., 2019; Ullrich, 2017). The latter concept was most developed in the works of Russian economists, particularly in the context of the growing use of sanction- and tariff-based mechanisms in the global economy.

The Soviet school did not directly address the issue of import substitution. This was largely due to ideological factors, which presupposed a focus on domestic resources within the system of reproduction processes and on a closed model of economic development. During the collapse of the USSR, the socialist model of economic development underwent transformation and entered the capitalist phase. At that time, the scientific works of Russian economists dealing with inter-country cooperation at the macroeconomic level were largely oriented toward neoliberal principles of structuring foreign economic relations. The import substitution policy was interpreted within the broad framework of libertarianism, where priority was given to maximum openness of foreign trade and an outward orientation toward external markets. Among the academic works of that period that fall within this paradigm, we can highlight the studies of Chernova & Klimuk (2017) and Mityakov et al. (2025).

In the current economic environment, geopolitical and geoeconomic guidelines have undergone significant perturbations. Consequently, the frontiers of state policy have shifted substantially from a neoliberal development model toward a protectionist approach aimed at intensifying import substitution processes and strengthening technological sovereignty. The scope of scientific research has expanded to include the search for effective macroeconomic models integrated into this new macroeconomic agenda, largely connected to issues of import substitution. Among contemporary works in this field, notable contributions within the Russian economic research community include the studies of Elshin et al. (2022); Stryabkova et al. (2018); Sukhanova & Lyavina (2014); and Volodin et al. (2023). Building on these studies, the following section presents a review of selected approaches to the study of the category of import substitution.

Sukhanova & Lyavina (2014), propose the following interpretation of the concept under study: "Import substitution is an economic strategy and industrial policy of the state aimed at protecting domestic producers and ensuring that the population has access to all necessary consumer

goods by replacing imported products with domestically produced ones" (p. 26). According to their approach, import substitution is shaped by two strategies that define the temporal framework of the process. In the first stage, within short-term planning horizons, import diversification is to minimize the risk of dependence on a limited range of countries involved in cross-border supply chains. In the second stage (medium- and long-term periods), the strategy of import substitution is implemented through the creation of domestic equivalents of goods imported from abroad and the pursuit of technological sovereignty. Thus, import substitution is viewed through the principle of "planning horizons", which defines both the content and the boundaries of this process.

This position, which corresponds to the principle of implementing import substitution policy as a mechanism for stimulating the development of local industries and enhancing the efficiency of structural economic development, is reflected in the works of Lozovskii (2014); Romyantseva (2020); Smirnov (2012), etc.

A substantive characterization of the studied category is offered by Mingulov et al. (2024); and Safiullin & Elshin (2023). According to their approach, import substitution is considered an adaptive instrument for ensuring sustainable economic development under the conditions of disrupted transnational cooperation chains and external constraints. Mingulov et al. (2024) defines import substitution as a tool of state policy aimed at adapting to sanction-induced shocks.

The international perspective on interpreting the concept of import substitution is primarily oriented toward the idea of examining this phenomenon through mechanisms for ensuring global competitiveness and addressing the developmental gap between advanced and developing economies. Among the scholars working within this framework, we need to mention Feng et al. (2012); and Malik & Wickramasinghe (2013), etc. For example, in the study by Feng et al. (2012), "The Connection between Imported Intermediate Inputs and Exports: Evidence from Chinese Firms", import substitution is identified as a key instrument for strengthening local producers, thereby enhancing the competitive position of the national economy in global markets and expanding its export potential.

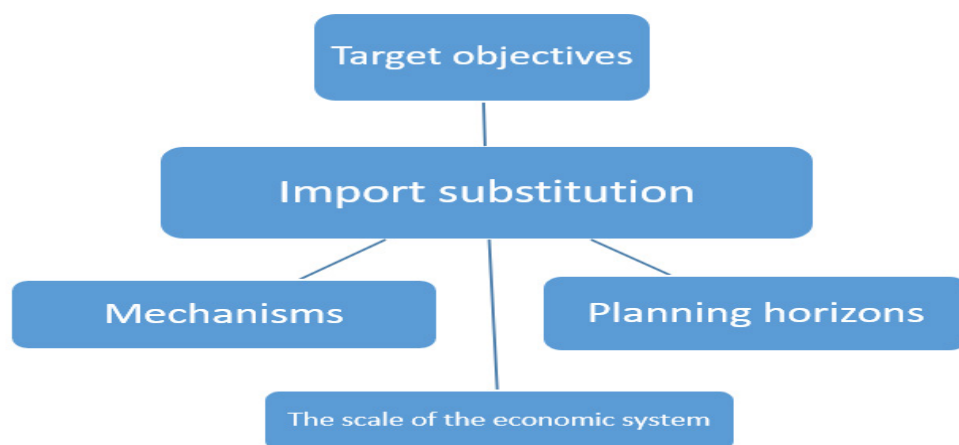
MATERIALS AND METHODS

Drawing on the existing body of scientific views and conceptual approaches to the role and significance of import substitution policy in today's economic environment, it can be observed that the essence and content of this category largely depend on the conceptual focus of research

in relation to the possible objectives of implementing such a policy, as well as on the prevailing conditions in forming the international competitive environment and the geoeconomic agenda. This means that a key aspect of the substantive interpretation of import substitution is its grounding in the following basic principles (Figure 1):

- Target objectives for implementing import substitution policy (global competitiveness, industrialization, and structural development of the economy, localized sanctions);
- The scale of the economic system (macro- and meso-level) serving as the object of research into the prospects for implementing import substitution policy;
- Planning horizons and time frames for implementing the import substitution policy;
- Mechanisms for implementing import substitution programs.

Fig 1. Fundamental principles defining the interpretation and essence of the concept of import substitution.



Source: own elaboration.

RESULTS AND DISCUSSION

Expanding on the proposed approach, it is essential to focus on the scale of the economic system when interpreting the concept of import substitution. Given that import substitution as a process of state regulation is characterized by territorial boundaries, these boundaries largely define the essence of this phenomenon. The national and regional territorial contours determine the parameters and characteristics of the import substitution policy, thereby shaping both its strategic goals and operational mechanisms. At the scale of the national economic system, import substitution programs are executed in line with a unified federal agenda, with due regard to nationwide priorities for the development of national productive forces.

This includes aligning industrial policies, technological innovation strategies, and labor development programs with the overarching objectives of national economic sovereignty and sustainable growth. At the regional level, these federal priorities may be supplemented by the regional sustainable development agenda, which encompasses targeted measures to intensify import substitution programs based on specific regional needs, resource availability, and the structural organization of the regional economic system. In other words, import substitution measures at the meso level may expand and complement the range of objectives set by the federal foreign economic agenda, allowing for greater adaptability and responsiveness to local economic conditions. This layered approach ensures coherence between national and regional policies while addressing the distinctive challenges and potentials inherent in diverse economic territories.

A key principle shaping the concept of import substitution is the principle that reveals the specific features of the mechanisms for implementing import substitution programs. These mechanisms are largely determined by the target objectives of the import substitution process, which may vary depending on the economic context, geopolitical conditions, and the nature of external constraints. For instance, when state programs in this area are developed under conditions

of external sanctions, the mechanisms of import substitution are primarily focused on promoting scientific and technological progress aimed at developing and producing domestic analogues.

Such programs aim to ensure technological sovereignty in the face of restricted imports, strengthen national security in economic terms, and create a robust framework for the domestic production of critical goods. In addition, increased attention is given to diversifying import supply chains geographically, reducing dependency on limited foreign sources, and ensuring resilience in strategic sectors. The development of the educational services market and the labor market also gains importance, with a particular focus on cultivating professions that are in high demand under conditions of restricted imports. This emphasizes the integration of human capital development with strategic economic priorities, ensuring that workforce skills are aligned with the technological and industrial needs of the national economy.

In cases where import substitution programs are implemented to ensure the global competitiveness of the economic system, prioritization may focus on the development of those sectors of the economy that, according to current and prospective technological trajectories, will determine the present and future positions of the national economy in the global landscape. For example, state policy may concentrate on the development of digital technologies, artificial intelligence, advanced manufacturing, and other knowledge-intensive sectors that define global competitiveness in the sixth technological paradigm. These strategic priorities aim not only to replace imported goods but also to create domestic capabilities that can compete internationally, ensuring that import substitution contributes to long-term economic resilience and innovation-led growth.

Finally, among the key principles forming the basis for the substantive analysis and interpretation of the concept of import substitution, it is essential to include the principle of "planning horizons." This principle implies the need to integrate the time factor into both strategic and operational planning. Long-term programs focus on structural transformations, technological advancement, and strategic sectoral development. Medium-term programs aim at adapting production capacities and workforce skills, while short-term programs are designed to provide immediate responses to external pressures such as sanctions, trade disruptions, or sudden shifts in global supply chains. This multi-horizon approach allows for a balanced implementation of import substitution policies, ensuring that immediate operational needs do not compromise long-term strategic objectives.

Building on the research and interpretation framework of the import substitution economy and considering the subject of this study, which focuses on developing adaptive import substitution programs under external restrictions that limit the implementation of sustainable development principles, the following interpretation of the concept is proposed.

Forced import substitution is understood as the process of intensifying mechanisms for the development of domestic sectors of the economy, including the scientific and technological complex, to adapt the national economic system to the transformation of external cooperative links, ensure the regularity of reproduction processes, support structural development, and create a basis for the intensification of sustainable development under conditions of systemic transformations. The key principles for implementing a forced import substitution policy include target objectives related to localizing negative effects (sanctions shocks) within the framework of emerging external restrictions; short-term (operational) planning horizons combined with guidance for long-term import substitution programs; and priority mechanisms of import substitution, which serve as tools for operational adaptation to changing external conditions according to tactical principles for current adaptation.

Forced import substitution represents a comprehensive strategy that integrates national and regional objectives, technological and industrial priorities, and short-, medium-, and long-term planning perspectives. By balancing immediate economic needs with long-term structural development, forced import substitution ensures the resilience, sustainability, and global competitiveness of the national economy in the face of evolving external challenges.

CONCLUSIONS

The economy of forced import substitution is a key mechanism for adapting the national economic system to systemic transformations and creating conditions to implement the principles of sustainable development. Under the conditions of turbulence in external markets, risks of disruptions in international supply chains arise, which creates threats to national economic security and a subsequent decline in social welfare. In such circumstances, the implementation of sustainable development mechanisms may be undermined, making the development of adaptive forced import substitution programs an extremely important strategic task.

The approaches of scholars to interpreting the concept of import substitution allow us to view this category

systematically. Its study is shaped through three key approaches, each of which defines the research focus and framework. Focusing this research on the need to study import substitution under external restrictions, the transformation of the geoeconomic agenda, and the implementation of sustainable development principles highlights the necessity of emphasizing methodological aspects. These methodological aspects should be aimed at studying the basic principles that determine the methods, target objectives, scale, mechanisms, and planning horizons of import substitution programs directed toward the sustainable development of the economy under dynamically transforming external economic conditions. This agenda sets the basic contours for implementing protectionist and forced measures of foreign economic regulation to maintain competitiveness in global markets and to support domestic producers amid the reconfiguration of the geoeconomic institutional environment. This approach makes it possible to consider the category of forced import substitution examined in this study from the standpoint of conceptual analysis, which determines the subsequent development of an appropriate methodological toolkit. This toolkit forms the basis for constructing target models of import substitution and for advancing new methodological approaches to the study of sustainable development theory.

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