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Pirson K. On lines and planes of closest fit to systems of points in space. Phil. Mag. (6), 2, 559-572, 1901

Цифровая платформа инвестиционных проектов [Электронный ресурс]. - Режим доступа: <https://investprojects.info/> (дата обращения: 31.08.2022)

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### **Improving multiplier method for assessing import substitution strategy<sup>1</sup>**

#### *Abstract*

Development and implementation of import substitution policy largely falls on the shoulders of management and coordinating structures of regions. This determines need for decision makers in assessments to identify priority areas of import substitution, taking into account multiplier effects, in order to form evidence-based policy and import substitution programs, as well as to harmonize them with other development of region. The paper has improved the multiplier method for analyzing effectiveness of import substitution policy at the regional level. The approach is demonstrated by estimates based on data from the Republic of Sakha (Yakutia).

*Keywords:* import substitution policy, multiplier, regional economy

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### **Совершенствование мультипликативного метода оценки стратегии импортозамещения**

#### *Аннотация*

Разработка и реализация политики импортозамещения во многом ложатся на управленческие и координирующие структуры регионов. Это обуславливает потребность лиц, принимающих решения, в оценках, позволяющих определить приоритетные направления импортозамещения с учетом мультипликативных эффектов для формирования обоснованных (доказательных) мер и программ импортозамещения, а также их согласования с другими целями развития субъектов. В работе усовершенствован мультипликативный метод для анализа эффективности политики импортозамещения на региональном уровне. Подход иллюстрируется оценками на данных Республики Саха (Якутия).

*Ключевые слова:* импортозамещение, мультипликатор, региональная экономика

In Russia a new stage of import substitution began in 2022, associated with an increase in the number of various restrictive measures introduced by foreign states and international organizations in relation to the activities of a number of Russian companies, industries and individuals. As a result, Russia has become the world leader in terms of the number of sanctions imposed on it. The

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previous stage refers to the period of the 2020 pandemic, when the relevance of import substitution policy greatly increased for a number of reasons: the decline in world oil prices, the devaluation of ruble, the reduction in global trade, the introduction of quarantine measures due to the spread of the coronavirus, which led to disruptions and breaks in global production chains. At the same time, the regulatory framework for regulating the import substitution of goods began to take shape in 2014, when the first relevant program<sup>1</sup> was approved, among the goals of state policy in the field of implementation of which is the promotion of economic growth rates above the world ones while maintaining macroeconomic stability. Moreover, this program considers the economic system at the national level and in the sectoral context, without touching on the issues of socio-economic development of regions and provides for interaction with regions only in the framework of supporting the implementation of regional programs and providing subsidies. However, the Russian regions are considered “the main conductors of the state industrial policy and the policy of import substitution”<sup>2</sup>, implementing their own programs and other regulatory legal acts in this area coordinated with federal strategic documents (see, for example, the review [Бородкина et al., 2015]). And in 2022, the heads of the regions were instructed, taking into account the geographical features of the respective territories, to take comprehensive measures to support the population and local companies in the face of sanctions<sup>3</sup>. As a result, the main burden for the implementation of the import substitution policy falls on the shoulders management and coordinating structures of regions. At the same time, the most appropriate approach is when the system of measures for import substitution is linked to long-term directions and goals of regional development (see, for example, the experience of the Altai kray [Добрыднева, 2017]) and is not considered solely from the point of view of ensuring economic security.

To assess and analyze the impact of import substitution on socio-economic indicators and economic growth at the national level, a wide range of indicators has been developed that show different dynamics on Russian data and therefore do not allow drawing unambiguous conclusions (see [Готовский, 2021]). More effective in this context is the use of input-output tables, which allow one to study the country's dependence on imports of certain goods along value chains (on Russian data [Готовский, 2021; Стрижкова, 2016]). Obtaining quantitative estimates within the framework of this approach requires appropriate methodological and information support, as well as tools. For this reason, ex post assessments at the national level are mainly carried out on Russian data. In view of the foregoing, assessments at the regional level that help decision makers to determine priority areas for import substitution taking into account multiplier effects for the formation of evidence-based policy and import substitution programs, as well as their harmonization with other development goals of the regions, are highly demanded.

During this study, the method for quantitative assessment of effects at the regional level has been improved, which makes it possible to analyze the impact of changes in imports on multipliers by sector, taking into account the structure of supplies. On the one hand, this approach allows us to identify industries in which the import substitution policy leads to the greatest increase in multiplier effects in the region. This may be considered as an indicator of the policy effectiveness and may be used to justify measures of regional industrial policy. On the other hand, it makes it possible to meaningfully analyze and explain the causes of differences in the obtained changes in multiplier effects, and therefore subsequently determine the necessary measures to support and develop individual industries for the socio-economic development of the region, that is, consider the multiplier as an object of management. In addition, the proposed method allows us to consider various scenario options and, accordingly, make a comparison in terms of effect variation. Thus, estimates can be obtained for the import substitution policy, when, as a result of the measures taken,

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<sup>1</sup> Decree of the Government of the Russian Federation of April 15, 2014 No. 328 "On approval of the state program of the Russian Federation "Development of industry and increasing its competitiveness"

<sup>2</sup> Chairman of the Federation Council: Regions are the main conductors of the state industrial policy and the policy of import substitution. URL: <http://www.council.gov.ru/events/news/52319/> (date of the application: 20.07.2022)

<sup>3</sup> Decree of the President of the Russian Federation of March 16, 2022 No. 121 "On measures to ensure socio-economic stability and protection of the population in the Russian Federation"

there is an increase in the final demand for local products within the region due to a reduction in the volume of imports (for example, increasing competitiveness and increasing the volume of products already manufactured), or there is an increase in the Russian component in the manufactured product instead of imported raw materials, components, services (localization of manufacturing).

Given approach is demonstrated by estimates based on the data of the Republic of Sakha (Yakutia), for which we have estimated a symmetric input-output table. For example, in the case of an increase in the share of final consumption of local agricultural products by 1% due to a reduction in the import component, the multiplier increases by 1.1% (the same indicator across Russia is 1.2%). In other words, if consumer preferences change in such a way that the share of local products in the structure of meeting final demand increase by 1%, with a corresponding reduction in imported products, the demand stimulation policy becomes will be more effective by 1.1%. Based on the estimates obtained by the approach, the largest increase in multiplier effects in the Republic of Sakha (Yakutia) is achieved with an increase in the share of final consumption of local manufacturing products, the smallest increase – in the transport and communications industries.

## ЛИТЕРАТУРА

Бородкина В.В. и др. Исследование Программ развития импортозамещения в регионах Российской Федерации // Креативная экономика. – 2015. – № 9(11). – С. 1397–1414. doi: 10.18334/ce.9.11.2088

Готовский А. В. Вклад импортозамещения в экономический рост России // Вопросы экономики. – 2021. – № 4. – С. 58-78

Добрыднева Т.С. Региональные аспекты реализации программы импортозамещения // Экономика. Профессия. Бизнес. – 2017. – № 1. – С. 16-21.

Стрижкова Л. А. Использование таблиц «затраты-выпуск» при оценке зависимости российской экономики от импорта и процессов импортозамещения // Вопросы статистики. – 2016. – № 5. – С. 3-22.

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### **Формирование системы анализа и прогнозирования межрегиональных и межотраслевых взаимодействий на основе анализа больших данных**

#### *Аннотация*

В данной статье была проделана работа по первичной подготовке данных экономических показателей регионов России в рамках Базы Знаний ИЭОПП СО РАН. В ходе работы был произведен анализ данных на стационарность и гетероскедастичность. В большом количестве временных рядов была выявлена нестационарность, которая будет учтена в дальнейшем моделировании. Также, в рамках исследования была создана комплексная экспертная тестово-аналитическая система для принятия решения о необходимости логарифмирования данных.

*Ключевые слова:* гетероскедастичность, стационарность, машинное обучение, большие данные, база знаний