

Optimizing the Effect of International Trade on Population Well-Being

Optimización de los efectos del comercio internacional sobre el bienestar de la población

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ABSTRACT:

It has been established that nations with an active part in international trade which are undergoing profound economic, social, and social-political transformations may face a number of negative effects, which requires conducting relevant analysis and working out proper reacting activities. Furthermore, it has been proven that a key component of the mechanism underlying the effect of international trade on population well-being is economic growth. The role of the system's regulatory elements in this case may be taken on by specific institutional forms of intervention in market mechanisms, like the nation's foreign-trade and domestic economic policy and its income redistribution system. To help balance out the Russian Federation's foreign-trade flows without any negative effects on population well-being, the authors propose a set of activities aimed at streamlining the production process in terms of achieving reduced energy intensity and altering the structure of the economy in terms of boosting the production of medium- and high-tech products with high added value that will be in stable demand in the global market.

Keywords: optimization; effect, impact; international

RESUMEN:

Se ha establecido que las naciones con una participación activa en el comercio internacional que están experimentando profundas transformaciones económicas, sociales y político-sociales pueden enfrentar una serie de efectos negativos, lo que requiere realizar análisis pertinentes y elaborar actividades adecuadas de reacción. Además, se ha demostrado que un componente clave del mecanismo subyacente en el efecto del comercio internacional sobre el bienestar de la población es el crecimiento económico. El papel de los elementos reguladores del sistema en este caso puede ser asumido por formas institucionales específicas de intervención en mecanismos de mercado, como el comercio exterior y la política económica nacional y su sistema de redistribución de ingresos. Para ayudar a equilibrar los flujos de comercio exterior de la Federación de Rusia sin efectos negativos en el bienestar de la población, los autores proponen un conjunto de actividades encaminadas a racionalizar el proceso de producción en términos de reducir la intensidad energética y alterar la estructura de la economía en términos de impulsar la producción de productos de media y alta tecnología con

1. Introduction

The insufficient market capacity of most of the nations within Eastern Europe and the CIS and the need to ensure high economic growth rates that would help compensate for the effects of the transformation slump are the major factors behind the necessity of rationalizing the use of external drivers of economic development, partnership in international trade being one of them.

The increased functional foreign-trade openness of most nations and their having gained entry into the World Trade Organization attest to the virtual consummation of the initial stage in the integration of their economies into the global and regional systems of international division of labor.

However, nations with an active part in international trade which are undergoing profound economic, social, and social-political transformations may face a number of negative effects, which requires conducting relevant analysis and working out proper reacting activities. Among the major items on today's agenda is the effective and efficient enhancement of foreign trade in terms of optimizing its effect on population well-being, improving which is the ultimate goal of all economic activity.

Issues related to assessing the state of the financial market have been explored in depth by S.V. Golovanova (Golovanova, 2010), A.N. Pozdnyakova (Pozdnyakova & Shavlovskii, 2014), A.I. Bel'chuk (Bel'chuk, Markov, Oreshkin, & Utkin, 2014), M.A. Gubina (Gubina, 2010), G. Keski (Keski, 2015), V.S. Yakushkin (Yakushkin, 2015), and others. Having said that, the literature is lacking today regarding the systematic analysis of the effect of international trade on population well-being factoring in the major theories dealing with international trade and economic development, while there exists a paucity of comprehensive research into the role international trade plays in paving the way for the well-being of transformation societies and no sound rationale has been provided yet for where the nations with transformation economies, including the Russian Federation, stand in the process of reforming the global trade regime. This paper's relevance is determined by the topic's significance amid a lack of proper research into it at both the theoretical and analytical levels.

2. Methodology

The well-being of the population is the universal criterion of the efficiency of economic activity, including in international trade specifically, and determines the potential for meeting the tangible and intangible needs of society, which may be distinguished by characteristics that are not inherent to the plain sum-totality of consumer needs. This makes it possible to form an idea of the structure and formation characteristics of population well-being, which normally grows through ensuring sustainable development as a harmonious combination of its economic, social, and environmental components.

In conducting their applied economic research study, the authors had to choose specific indicators for measuring population well-being, which they divided into 2 general groups: non-integral and integral. The first group included GDP per person, income and consumption levels, and indicators of the degree to which a person's particular needs are met. Integral indicators were classified based on several attributes, like the way to obtain information, sources for obtaining information, and the way to aggregate data.

Based on the criteria proposed (those of universality and accessibility), the authors selected a set of major indicators for measuring population well-being which can be used as criteria of the effectiveness of international economic interaction, namely the Human Development Index,

GDP per person, and individual income and consumption levels.

By reference to the major tenets of the theory of international trade and theory of development (Bilman, 2013; Turkeli, 2002; Huseynova, 2015; Fold, 2008), the authors established a set of potential channels of the effect of international trade on population well-being. These, above all, include the redistribution of factors of production, which optimizes the structure of the economy based on competitive advantages but, at the same time, may act as a factor for the emergence of unfavorable trends in social-economic development.

Research has shown that the key component of the mechanism underlying the effect of international trade on population well-being is economic growth. The role of the system's regulatory elements in this case may be taken on by specific institutional forms of intervention in market mechanisms, like the nation's foreign-trade and domestic economic policy and its income redistribution system.

3. Results

The authors' analysis has found that boosts in foreign-trade openness (39.5% between 2008 and 2015, or 4.3% annually) have been accompanied by outperforming import growth rates, characteristic of most nations (the annual import growth rate in the period 2008–2015 surpassed its export counterpart by 1.8%). All this has resulted in the worsening of their foreign-trade balances, which, in turn, has had a negative effect on macroeconomic stability.

The authors have also revealed an inadequate attitude of transformation economies to a number of potentially positive effects of international trade, which may be viewed as the consequence of the poor efficiency of their relevant institutions. To be specific, the findings of the authors' analysis indicate a weak correlation between indicators of growth in foreign-trade openness and inflows of direct foreign investments (quadratic correlation coefficient $R^2=0.103$), which could speed up drastic changes in the economy.

The internal markets of transformation nations are witnessing their price levels getting closer to regional and global ones (in 1992, the average ratio of global to internal price levels was 10.6, in 2008 – 3.5, and in 2015 – 1.7). The findings of the authors' empirical analysis indicate a generally positive effect of this process (restrictions on the use of social dumping) on the well-being of the population of transformation nations (the level of wages corrected by purchasing power parity is correlated with the level of internal prices with $R^2=0.532$) and refute the assumption about the negative social effect of a boost in the competitiveness of transformation economies as a consequence of growth in their foreign-trade openness, since the indicator of global competitiveness is in a directly proportional relationship with the level of labor productivity (correlation coefficient $R^2=0.679$), wages ($R^2=0.786$), and employment ($R^2=0.319$).

The findings of the authors' regression analysis of the relationship between relative indicators of the deviation of the well-being and foreign-trade openness of nations from the average values for the group of transformation economies (2015 data) corrected by geographic determinants (the territory's area and borders' length parameters) substantiate the overall positive effect of international trade on the well-being of their population:

$$\Delta W_i = 0,152 + 0,85 * \Delta Op_i + (1,36E - 07) * Ter_i - (8,4E - 05) * Bor_i \quad (1),$$

where ΔW_i is the coefficient of the deviation of the GDP per person indicator for a particular nation from the average value for transformation nations; ΔOp_i is the coefficient of the deviation of the foreign-trade openness of a nation's economy; Ter_i is the size of a nation's territory; Bor_i is the length of a nation's borders.

The geographic concentration of foreign-trade flows within a comparatively insignificant radius lessens transformation nations' potential for the use of the advantages of international specialization and shrinks the base for stable economic development.

The authors' analysis of the effect of the commodity structure of the nations' foreign trade on the average annual economic growth rates in the period 1995–2015 has produced the following regression equation:

$$Y = -16,228 + 0,103x_1 + 0,432x_2 + 0,081x_3 + 0,026x_4 + 0,343x_5 - 0,285x_6 + 0,167x_7 + 0,202x_8 - 1,600x_9 + 0,162x_{11} - 27,572x_{12} + 1,251x_{13} + 0,631x_{14} \quad (2),$$

where Y is average growth in a nation's GDP; x_1 – x_8 characterize the structure of a nation's export and import respectively – more specifically, the share of output from the agricultural (x_1 and x_5), extractive (x_2 and x_6), and processing (x_3 and x_7) sectors and the service sector (x_4 and x_8); x_9 – x_{13} point to the nation's belonging to one of the groups: new EU member-states (x_9), states which are candidates for EU membership (x_{10}), Balkan states (x_{11}), CIS states which are energy exporters (x_{12}), other CIS states (x_{13}); x_{14} is a fictitious variable for Bosnia and Herzegovina.

To help balance out the Russian Federation's foreign-trade flows without any negative effects on population well-being, the authors propose a set of activities aimed at streamlining the production process in terms of achieving reduced energy intensity and altering the structure of the economy in terms of boosting the production of medium- and high-tech products with high added value that will be in stable demand in the global market.

These activities ought to be complemented by the diversification of the geographic structure of the import of energy in the mid-run. To realize the mid-term strategy for the development of the Russian Federation, it pays to augment the Western and Eastern vectors of foreign trade. Using the economic-mathematical model for general economic equilibrium, the authors have forecasted the potential effects of changes in the foreign-trade policy of the Russian Federation (Table 1).

Table 1
Potential Effects of Changes in the Foreign-Trade Policy of the Russian Federation, %

Indicator	Base model	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Exogenous quantities					
World import price	0.974	0.974	0.974	0.897	0.897
World export price	1.000	1.000	1.000	0.700	0.700
Terms of trade	1.029	1.029	1.029	0.778	0.778
Import tariff	0.027	0.000	0.026	0.026	0.028
Endogenous quantities					
Export	-	3.5	0.2	-43.6	-43.6
Import	-	2.8	0.2	-52.4	-52.4
Tax revenue	-	-10.3	-0.5	-32.2	-32.2

Total revenue	-	-0.6	0.0	-30.8	-30.8
Consumption	-	-0.9	0.2	-15.7	-15.7

The results of these calculations are founded on the modeling of the following scenarios: Scenario 1, which implies the total liberalization of the foreign-trade regime, i.e. reducing customs tariffs to the zero level; Scenario 2, which implies bringing the average arithmetic rate for the customs tariff in full alignment with requirements set by international organizations, i.e. reducing it by 3.5% (from 6.52 to 6.29%) or reducing the import tariff calculated based on the actual duty by 0.1%; Scenario 3, which implies the worsening of the terms of trade through the global prices for Russian exports declining by 39% and those for imports – by 7.8%; Scenario 4, which implies changes in the tariff regulation of foreign trade due to the fulfillment of agreements with international organizations (Scenario 2) and the worsening of the state of the global market (Scenario 3).

4. Discussion

The reliability of the proposed approaches to optimizing the effect of international trade on population well-being is substantiated by the sustainability of development based on the model for ramping up the production of industrial output. At the same time, the findings of the authors' analysis of the social potential of the commodity structure of the foreign trade of particular transformation nations, based on a study of the sectoral characteristics of the use of factors of production and factor-by-factor distribution of income, indicate the advisability of developing the service sector and the processing industry.

The findings of the authors' study into the characteristics of foreign trade in products from the agro-industrial complex and its effect on the well-being of the population of transformation nations indicate that losses incurred by households within the new EU member states as a result of restrictions imposed on the import of agricultural output range from 1.8 to 3.1% and within the CIS from 7.1 to 9.8% of their consumption budget.

It has been established that under conditions of the absence of trade barriers and uninhibited mobility of manpower between the inner regions of Eastern European nations the effect of the force of economic attraction (the agglomeration effect) cannot entail significant negative consequences, since it only applies across a small radius (300 km from the region's center, the average distance between Eastern European regions being 750 km).

The findings of the authors' analysis refute in part the warning about the further liberalization of the foreign trade of transformation nations (in terms of its potential impact on deepening spatial inequality). That being said, the authors have also identified the need to boost manpower mobility as a factor for the economic stabilization and convergence of population well-being, since with worker movement restrictions in place the effect of agglomeration covers an area beyond a radius of 85 km from the economic center and reaches its peak at a distance of 1,357 km.

5. Conclusion

Summing up, it is worth noting that population well-being is an integrated social-economic category that determines the potential for meeting the tangible and intangible needs of society, as an aggregate of individuals, which may be distinguished by characteristics that are not inherent to the plain sum-totality of consumer needs.

In keeping with specific scholarly tenets, the authors have provided a rationale for the fact that international trade has an effect on population well-being through: redistributing the factors of production; expanding the potential for the use of economies of scale and boosting product diversity; diffusing knowledge through spreading technology and maximizing the effect of training with production; boosting the sensitivity of the economy and households to

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