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DECISION MAKING ON THE SELECTION OF FACTORS AFFECTING THE INCREASE OF NON-OIL EXPORTS IN CASE of AZERBAIJAN

Abstract. The purpose of this study is to assess the factors influencing the development of the non-oil sector in the Republic of Azerbaijan and to establish a decision-making mechanism to increase its exports, which is formed by explaining the export process through the identified factors. It is obvious that many factors influence local changes taking place against the backdrop of global changes. Identification of the dominant factors influencing the growth of non-oil exports leads to the need to explain exports by a limited number of factors with a high influence. More flexible analysis with selected high performance factors, medium and long-term forecast prices can be calculated.

Key words: non-oil export and policy, factors, fuzzy logic, export modeling, expert survey

Introduction

The global technological advances created by the 4th Industrial Revolution have led to radical changes in economic sectors in the worldwide. High technology has already become attractive to developing countries, which aim to produce high value-added products and services to increase their share of exports.

Therefore, it is necessary to increase the competitiveness of the Azerbaijani economy against the background of these global challenges, using the factor of oil and gas richness, to ensure the establishment of non-oil industry, especially on the basis of high technologies to increase its exports.

This, in turn, requires an assessment of the impact of domestic and international factors on increasing non-oil exports in our country and the establishment of appropriate decision-making mechanisms [1-6, 24].

Literature Review

Analysis and forecasting models of the non-oil sector in Azerbaijan, especially directional analysis to increase its export potential, were carried out at the macro, meso and micro levels by the Ministry of Economy and the Central Bank of the Republic of Azerbaijan, mainly their research institutes. Since 1998, international financial institutions such as TACIS, the International Monetary Fund, the World Bank, the Asian Development Bank and SECO have been assisting in this study by attracting foreign experts.

Azerbaijan's General Equilibrium Model (AzMod) has been established at the Institute for Scientific Research on Economic Reforms (ISRER) of the Ministry of Economy of the Republic of Azerbaijan. The AzMOD model is important as a special tool for conducting simulations to assess sectoral impacts on the development of the

non-oil sector and its export potential. However, the model is not sensitive to multivariate analyzes, nor to regular variability.

At the same time, ISRER has carried out complex work by various authors to assess the impact on non-oil exports: econometric models of the impact of world oil prices on the non-oil sector and budget expenditures, the dependence of non-oil exports on exchange rates, foreign direct investment and other relevant factors, and the impact of bank loans to the private sector on the non-oil sector have been established [1-2].

The impact of foreign direct investment and foreign capital inflows on the development of the non-oil sector was also modeled, and the impact of fiscal policy elements and micro-level factors on the non-oil sector, including non-oil exports, was studied. It should be noted that in the assessments conducted in these studies, the factors affecting non-oil exports were not selected on the basis of a special approach and were identified and considered separately according to the standard models used.

The Central Bank's Research Department has created a Dynamic Stochastic General Equilibrium (DGS) model to monitor the development of the country's economy. Relevant sub-models have been developed by various authors to forecast inflation, conduct stress tests, analyze the commercial and non-commercial sectors, determine the equilibrium price of real estate and the real effective exchange rate of the manat, directly affect economic development trends, especially non-oil exports allows to address issues such as the impact of foreign investment. However, these models do not allow for multi-factor analysis and forecasting of non-oil exports.

These studies mainly contribute to the development of the non-oil sector, in particular the study of its export potential, and show that there are different factors and the importance of taking them into account. However, it did not allow for a multi-factor analysis of the factors affecting the non-oil sector and the selection of factors that had a major impact.

For example, the experience of Australia, Canada, Malaysia, Norway, Saudi Arabia, Russia and Kazakhstan as oil exporters was considered in terms of developing the non-oil sector, especially in terms of increasing exports. The analysis showed that it is impossible to increase non-oil exports only due to successful macroeconomic indicators [7-13].

To this end, increasing non-oil exports, reducing oil dependence, building a trade-oriented ecosystem as a whole, increasing the confidence of foreigners, determining competitiveness in non-oil sectors, building capacity, analyzing the factors affecting export growth, and improving them in a balanced and coordinated manner requires the implementation of policies and mechanisms.

Research methodology

Classification of the factors influencing the growth of Azerbaijan's non-oil sector into three classes is important, first of all, in terms of qualitatively and quantitatively correct identification of factors in the selection process, and on the other hand, easy assessment of their impact levels.

Thus, the class classification of factors for the selection process increases the coverage of the selection process of influencing factors by classes, as well as prevents their exclusion and, as a result, ensures the completeness of the number of influencing factors.

At the same time, the selection process for each group is greatly simplified due to the fact that the number of factors in groups is approximately three times less than the total number of factors. As a result, the selection of factors for each group can be made both in terms of expert assessment and in terms of the convenience of using analytical methods. However, a new issue is the choice of a limited number of limited factors (about three times less than three) from the set of preferred factors selected for each group (nine factors if three factors are selected for each class).

It is important to note that it is at this stage that it is more difficult to re-select important factors from the selected factors for the classes under consideration, and the solution of a problem with a large analytical load arises. Therefore, a new approach is needed to select a limited number of superior factors from the set of factors identified by class [14-16, 29-33].

Analysis and results

Of the 49 factors initially identified by the experts on the basis of the analysis, 20 factors were selected as a result of the assessment of comparative advantages, and then 10 factors were selected as a result of reassessment [14, 17-23, 25-27]:

1. Exchange Rate (ER), 2. Interest Rate (IR), 3. Consumer Price Index (CPI), 4. Export Price Index (EPI), 5. GDP Growth in Partner Countries (GDPP), 6. World Market Price of Oil (WOP), 7. Foreign Debt (FD), 8. Labor Productivity (LP), 9. Population Growth (PG), 10. Average Tariff Rate in Partner Countries (TRP), 11. Number of Bilateral Preferential Trade Agreements (NTA), 12. Number of Enterprises Receiving Export Promotion (NEP), 13. Level of Organization of Customs Brokerage (LCB), 14. State of the Logistics System (SLS), 15. Geopolitical Position of the Country (GPC), 16. Export Diversification Index (DX), 17. Export Product Concentration Index (ECI), 18. Infrastructure Condition (IC), 19. State of Digitalization of Trade (SDT) and 20. Level of Study of Foreign Markets (LFM).

Assessments of 10 factors selected on the basis of observations were presented to a total of 8 experts. The determination of factor preferences was carried out according to the algorithm for estimating the eigenvalues and eigenvectors of the matrix, compiled in accordance with the methodology. Based on the matrices processed in MS Excel for each expert, using the Python software (Spyder), the finding of eigenvalues and eigenvectors matrix were evaluated [34-35].

Finally, the processing of the results revealed three factors that have the greatest impact on the increase in non-oil exports: world oil prices (0.68); GDP growth in partner countries (0.66) and export price index (0.64).

Initially, an econometric analysis of the export price index, selected on the basis of the above new methodology, GDP growth in partner countries and the impact of world oil price factors on non-oil exports was carried out.