

MODERN STATE AND PREDICTIONS OF ENSURING ECONOMIC SECURITY OF THE NKR

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In the article the methods of analysis of the modern economy of the NKR are presented on the basis of econometric models. This work aims at the development and identification of econometric models of modern economy of NKR for the assessment, prediction and security, on the basis of information published in the public domain. The necessity of development and creation of econometric models of economic security of the NKR dictated an important aspect of the viability of the unrecognized Republic.

Key words: *modern economy, prediction, economic security, econometric modeling, time series.*

Introduction

In addition to the political resources and social factors an important aspect of the viability of the Nagorno Karabakh Republic are economic resources. Despite all the economic difficulties associated with the unrecognized status of NKR, the Republic's economy is developing rapidly, improve social indicators. For two decades, the NKR has overcome the devastating consequences of war in almost all spheres of economic and social life. The agricultural sector has been restored as a traditional for Nagorno-Karabakh industry, as new – were established mining, energy, tourism and so on. Today rapid growths of the NKR economy are observed. The statistical indicators are the proofs of economic growth.

A fundamental transformation in the socio-economic sphere has brought to the fore of the problem of economic security. The severity of the problem in the Republic is present due to several reasons, in particular: the influence of such negative factors as the lack of recognition of the NKR status, the economic and political blockade by Azerbaijan, as well as the factors related to the formation of new business structures; the complexity of regulation of various forms of ownership in connection with a high degree of monopolization of the economy, low level of GDP per capita, the presence of unemployment, poverty and low levels of investment, low competitiveness of enterprises; weak development of market infrastructures; lack of experience of regulation of the market economy, lack of knowledge etc.

The concept of “economic security” used to justify certain positions related to economic risks that threaten the security of the country. This makes it necessary to establish the causes of threats to the economic security and aim for a scientific definition of this concept.

National economic security cannot be described with one definition, as it has several aspects: the Republic forces and means to counter the threat to the economic interests of the state and society; the ability of the economy to neutralize the effect of internal and external factors that have a negative impact on its preservation and further development; the ability of the country to ensure the compliance of the economic mechanism for changing circumstances and development; the ability to perform the necessary actions to achieve the goals over a given period of time; the ability to securely protect and efficiently use human, material, natural and financial resources of the country.

In accordance with the principle of efficiency of national resources must be used so that growth was observed in the non-production of the final product value, meet the demand of the consumer with the best structure. At the same time we need to ensure fairness of income distribution, and stability of the state. Collectively, national economic security refers to the state of the country, which in certain vital economic sectors, ensures compliance with national interests by purposeful and continuous development of individuals, state and society, or excludes the possibility of threat to the national economy reducing their scope to a minimum.

The problem of economic security in countries with economies in transition (which is the Republic of Nagorno-Karabakh) is quite specific: there is a danger of transformation of economy as a “relative economy”, the collapse of industries based on the latest technologies brain drain and a general decline of intellectual potential, incomplete use of available human capital and the plundering of natural resources, excessive increase in external debt relative to GDP, deterioration of scientific and educational systems. The definition of economic security involves: evaluating the internal and external threats, conditions and factors that lead to the emergence of threats to the Republic, society and the vital economic interests of the individual, based on the criteria characterizing the state of the economy, the vital interests of the Republic and a mechanism to ensure the vital interests, focusing on the development of cooperation of all public authorities. Special attention is required to develop the system of indicators of estimation of economic safety, definition of the thresholds of safety indicators, analysis of the factors influencing this assessment, a comparative analysis of the economic security of several countries with the aim of establishing indicators that are already in threat range and threaten their relationship.

Statement of the problem

The problem of economic security of the NKR can be solved by using econometric models of the main economic indicators of living standards of population and social sphere, which allows to evaluate the possibility of adoption to ensure the economic safety of the Republic.

First, it is necessary to consider such economic indicators as gross domestic product (GDP), which is a universal measurement tool of economic activity in the country. As it is known, the calculation of the GDP only considers the final product, besides, the products that were produced in the Republic and exported, are considered, but imported goods are not taken into account.

The main groups of indicators of economic security include: the overall economic potential of the Republic; the economic security of its defense capacity; the degree of possible independent development of the economy, the standard of living of the population, the level of safety of the financial system, the degree of economic independence, state system of economic security management.

Let's refer to the GDP of NKR directly during the last 15 years. In 1999 GDP was only \$ 59 million, which is 80% less than the figure that was in Soviet times. The growth rate has not kept itself waiting. By 2005, the GDP doubled and reached a figure of \$ 114 million and an economic growth of 14%. In 2009 GDP was \$ 260 million, and by 2012 accounted for approximately \$ 380 million. In the current year the NKR's GDP is projected at \$ 420-425 million. Based on the above statistics, we can understand that the economy of the unrecognized Republic is developing very dynamically. Despite the fact that GDP is not a measure of overall quality of life of the country, changes in the volume of production of goods and services per person (GDP per capita) is often used as a measure of greater or lesser prosperity of the average citizen of the country. Considering the fact that the population of the NKR in the last 15 years increased slightly (1999 – 139,4 thousand people, 2011 – 144.7 thousand people), we can conclude that GDP per capita grows every year, and with it the general welfare of the population.

Another important economic indicator is the budget of the NKR. The budget is a Central part of financial system of any state. Its main purpose is using financial resources to create conditions for effective development of Economics and solving national social problems, such as providing the population with public goods and services, redistribution of income, stabilization of the economy. Without these tasks, the authorities are almost powerless to achieve the legitimacy of the regime and to enlist public support. All these tasks cannot be resolved without the financial support. Therefore, the state accumulates a certain amount of funds (state budget revenues), and then distributes them on purpose (the expenditure of the state budget). The state budget is a financial plan that matches

expected revenues and expenses. Thus, the sum of the annual budget and source of revenue can adequately assess the economic resources of de facto state.

The agricultural sector has always been the backbone of the economy of Nagorno Karabakh. In Soviet times the growth rate of agriculture was quite large, the peak was in the decade from 1981 to 1990, when there were powerful material and technical bases with a large number of advanced agricultural equipment. However, after the war, the powerful system, created during decades, had been destroyed. And for the past two decades the process of agricultural recovery has been going on, but the pre-war figures are not yet achieved.

The government of the Nagorno Karabakh Republic elaborates the concept of food security, according to which it is expected to ensure the level of development of the economy, allowing conditions to provide the population with appropriate and affordable food, scientifically based standards of consumption independent of international market constructions, to prevent food crises. According to experts, the agricultural potential of the Nagorno-Karabakh Republic is so great that it is able to provide food not only for NKR, but also for a part of Armenia.

Overall, the NKR authorities will continue to transform the agricultural sector into a locomotive of Karabakh's economy as the main link ensuring economic safety of the Republic. Agriculture is a strategic sector and food security of de facto state is a priority. At the moment the main goal is the achievement of the pre-war figures in agriculture, for this purpose, every year investments in industry increase. In addition to budget funds, attempts are made to attract foreign investments.

In addition to agriculture we have rapidly developing industry in the last ten years. Mostly small and medium-sized enterprises are in private ownership. The largest enterprise for production of construction materials remains Stepanakert factory of construction materials, to which several quarries of building stone and facing materials of granite, felsite, marble, tuff, etc. belong on the territory of the Republic. The presence in NCR's rich resources of valuable tree species promises a great future for the forestry and wood industry. Almost half of the total industrial production comes from mining. Drmbon GOK, launched in 2003, is the largest enterprise of the mining industry of NKR. The plant employs 1,200 people and the company contributes to solving the problems of jobs in the country. "Basemetals" (enters into group of companies "VallexGroup"), the company owning the plant and Drmbon mine is the largest taxpayer of the de facto state. In 2011 the company has paid to the budget of the NKR about 3.9 billion drams of taxes (\$ 9.7 million). Nowadays, taxes and other payments from "Basemetals" account for 17% of the revenues of the entire budget. The field itself contains about 5-10% of the total reserves of gold and copper in the country. Other promising deposits are copper and molybdenum deposits of Tsakhkashen in Martakert region, NKR. The field promises to be much more promising, Vallex Group plans to invest about \$80 million in the development of this project. Good stocks are also in Kashatagh, Martuni and other regions. Taking into account the fact that the ore reserves on Drmbon field run out in 3 years, new field explorations are very important for the further development of the mining industry of NKR.

Other priority direction of the economy is energy. The rise in energy actualizes energy projects and plans to ensure economic self-sufficiency of the NKR. Over the past few years several small hydro power plants were commissioned — "Trghe-1", "Trghe-2", "Syunik-1" and "Syunik-2", "Madaghis-1", "Madaghis-2", and in the near future it is expected to launch "Trghe-3" and "Syunik-3". In addition to the Sarsang HPP, a new hydro power station will produce about 330 million kWh/h of electricity, the total potential of the republic allows to produce up to 700 million kWh/h, which is twice the NKR needs, potentially making the Republic the electricity supplier to neighboring countries. In this area the first step is also made, enabling citizens to become co-owners of state property – everyone can become a shareholder of Open Joint Stock Company "Artsakh HPP", the number of shareholders has reached 1,200 people there.

Thus, based on the above mentioned, we can confidently assert that the economy of NKR, despite the dependence on Armenia is developing very dynamically. GDP and budget of the de facto States grow each year, respectively, and increase the level of tax revenues in the budget, and it gives the opportunity to existing NKR a regime to solve the basic socio-economic problems. In addition, the opening of new businesses contributes to solving the most important problem in the Republic - unemployment.

Research results

Table 1 groups the main indicators: economic, living standards of population and social sphere.

Table 1

Dynamics of the main economic indicators of NKR

Years	Gross Domestic Product, total, mln. drams	GDP per capita, thsd. drams	Population size, thsd. persons	Natural growth of population, persons	Average monthly wages, drams	The lowest wages, drums	Money incomes of population per capita, thsd. drams
2000	23148,6	172,2	134,4	1037	27222	10000	23670,4
2001	23880,7	176	135,7	1231	28178	10000	26692
2002	26477,8	193,8	136,6	948	29673	10000	29380,2
2003	33883,7	247,3	137	826	33661	10000	34408,7
2004	42830	312,2	137,2	789	41170	10000	43061
2005	51379,4	373,1	137,7	744	51127	15000	51826,8
2006	61885,9	449,4	137,7	867	56700	15000	57901,8
2007	70791	510	138,8	918	68610	20000	69103,3
2008	87148,1	623,1	139,9	1101	80480	25000	80764,6
2009	102338,7	723,7	141,4	1555	88768	30000	88366,8
2010	118187,2	823,2	143,6	1353	92736	30000	96898,6
2011	135498,5	936,1	144,7	1289	98453	32500	112936,4
2012	150015,7	1023,3	146,6	1268	101346	35000	120425,5
2013	168563,6	1137,9	148,1	1027	1286211	45000	136500,4
2014	188840,3	1268,1	148,9	1119	141193	50000	150907,5
2015	209345,7	1414,3	148,1	1292	151058	50000	155940,4

Let's make the following designations:

Gross Domestic Product, total, mln. Drams - x_1 ;

GDP per capita, thsd. Drams - x_2 ;

Population size, thsd. Persons - x_3 ;

Natural growth of population, persons – x_4 ;

Average monthly wages, drams – x_5 ;

The lowest wages, dram – x_6 ;

Money incomes of population per capita, thsd. drams – x_7 .

To analyze the dynamics of economic indicators we used the following statistical procedures: correlation analysis, stepwise regression analysis (based on Fisher criterion) and the procedure of analysis and prediction of time series. The statistical analysis was applied SP Minitab 18. and SP Statistica 10.0.

When stepwise regression analysis was taken into account only those models at which the adjusted coefficient of determination more than 50%.

The result was obtained with the following model: income and the minimum wage depend on GDP per capita, while the adjusted coefficient of determination in both cases is above 95%. In the first case : the minimum wage from GDP per capita adjusted $R^2=96,55$. In the second case: incomes of GDP per capita adjusted coefficient of determination $R^2=99,51$.

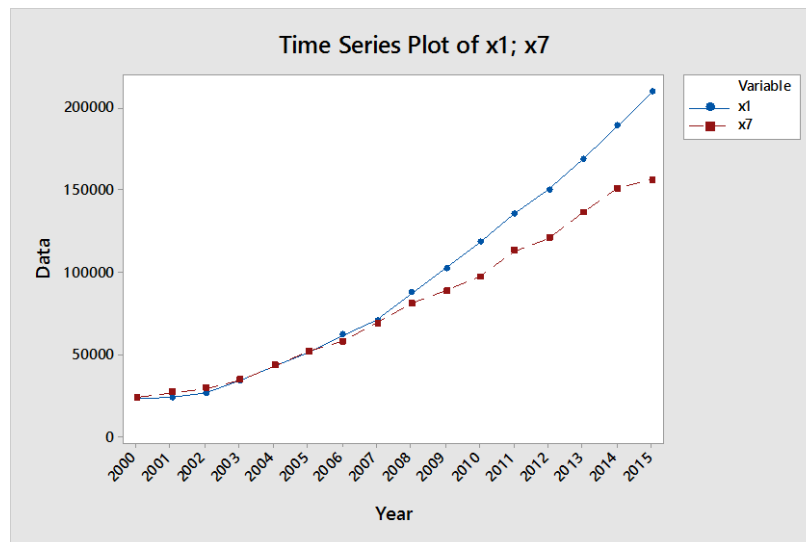


Figure 1. Time series GDP and Money incomes of population per capita

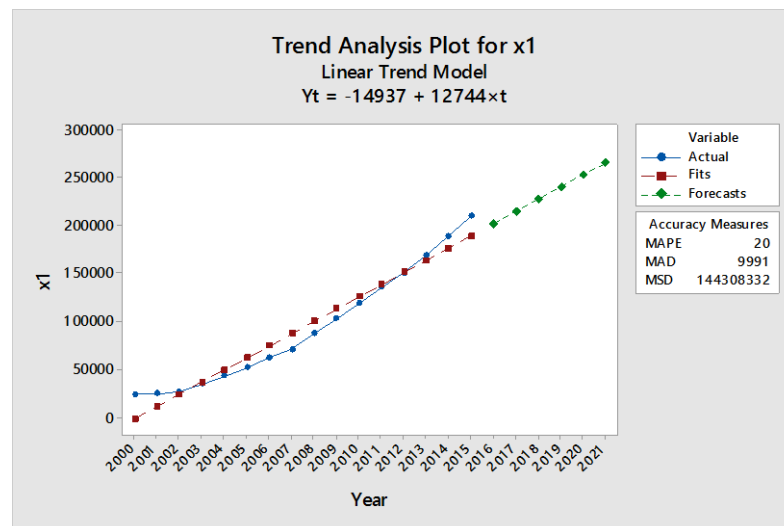


Figure 2. Trend analysis plot for x1

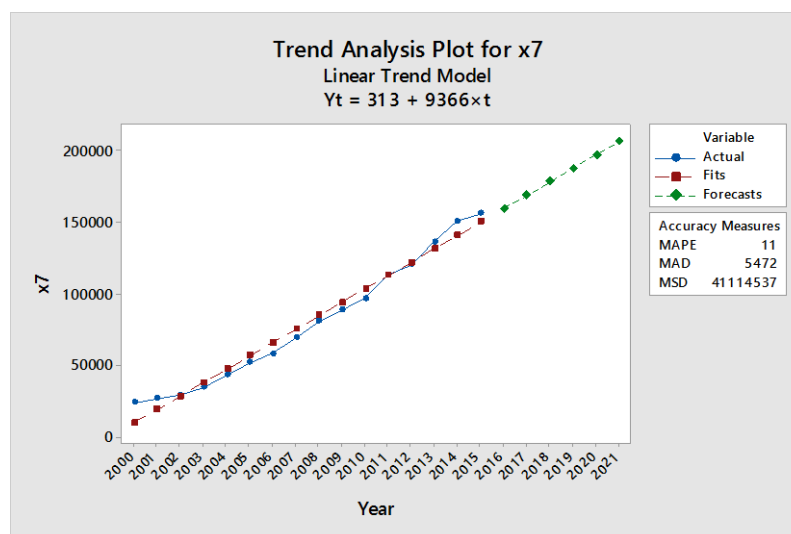


Figure 3. Trend Analysis plot for x7

Conclusion

Thus, to ensure the economic security of the NKR we need to pay special attention to indicators such as GDP and GDP per capita.

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ԼՂՀ ՏՆՏԵՍԱԿԱՆ ԱՆՎՏԱՆԳՈՒԹՅԱՆ ԱՊԱՀՈՎՄԱՆ ԱՐԴԻ ՎԻՃԱԿԸ ԵՎ ԿԱՆԽԱՏԵՍՈՒՄՆԵՐԸ

Ի.Վ. Հարությունյան, Լ.Է. Դանիելյան

Շուշիի տեխնոլոգիական համալսարան

Հոդվածում առաջարկվում է մեթոդիկա ԼՂՀ ժամանակակից տնտեսության վերլուծության հիման վրա էկոնոմետրիկ մոդելներ. Տվյալ աշխատանքը նպատակ ունի մշակել և նույնականացնել ԼՂՀ ժամանակակից տնտեսության համար էկոնոմետրիկ մոդելը, ԼՂՀ ժամանակակից տնտեսության գնահատման, կանխատեսման և անվտանգության ապահովման, այն տեղեկատվության հիման վրա, որը հրապարակվել է հանրային տիրույթում.

Էկոնոմետրիկ մոդելների մշակման եւ ստեղծման անհրաժեշտությունը թելադրված է ԼՂՀ տնտեսական անվտանգության չճանաչված հանրապետության կենսունակության կարեւոր առումով:

Բանալի բառեր: ժամանակակից տնտեսություն, ժամանակային շարքերի կանխատեսում, տնտեսական անվտանգություն, էկոնոմետրիկ մոդելավորում, ժամանակային շարքեր:

СОВРЕМЕННОЕ СОСТОЯНИЕ И ПРОГНОЗЫ ОБЕСПЕЧЕНИЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ НКР

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В статье предлагается методика анализа современной экономики НКР на основе эконометрических моделей. Данная работа ставит целью разработки и идентификации эконометрической модели современной экономики НКР для ее оценки, прогноза и обеспечения безопасности, на основании информации, опубликованной в открытом доступе.

Необходимость разработки и создания эконометрических моделей экономической безопасности НКР продиктовано важным аспектом жизнеспособности непризнанной республики.

Ключевые слова: современная экономика; прогноз; экономическая безопасность; эконометрическое моделирование; временные ряды.