

STATISTICAL ANALYSIS OF THE ECONOMIC INTEGRATION OF GEORGIA WITH THE EUROPEAN UNION AND PROSPECTS FOR DEVELOPMENT

Nino Abesadze

Ivane Javakhishvili Tbilisi State University, Georgia

crossref<http://dx.doi.org/10.5755/j01.em.19.4.8531>

Abstract

At the present stage of development the process of integration of Georgia into the world economic system has becoming deeper and deeper. For the formation of the right economic policy of the country it is necessary to assess these processes correctly and analyze further perspectives.

The data about the foreign trade of Georgia have been analyzed from the Geographical point of view and on the basis of proven statistical methods (statistical observation, grouping and methods of analysis). The dynamics of the export and import stream and the commodity structure of foreign trade of Georgia have been characterized. The analysis revealed the positive and negative sides of the current changes in this field.

Besides, the problems of indexes of foreign trade in Georgia have also been discussed. In order to calculate the main characteristics of foreign trade, the stochastic time series models have been used. On the basis of models, which were selected by means of testing, the classical methods of regressive analysis were worked out to forecast the calculations. The received results helped us to make the corresponding conclusions.

The type of the article: *Research paper.*

Keywords: *Statistical methods, forecast, Econometric methods, indexes.*

JEL Classification: *C1.*

1. Introduction

Introduce the problem

Today the globalization has become a crucial issue in the everyday political, economic or social and cultural life. From the strategic point of view, it is very important for Georgia to enhance the world trade- economic, financial and other kinds of relations, especially when the foreign interests of the country include sharing the advanced European values and experiences and joining the European Union. In order to form the right economic policy of the country it is necessary to conduct a theoretical and practical research in the area of the integration of Georgia into the world economic area, to study the foreign economic contacts quantitatively, to reveal the main tendencies of the development, to calculate their forecasting indexes, to estimate the results correctly and to work out appropriate political-economic proposals and preventive measures.

Within the background of the globalization processes taking place in the world economy, one of the principal preconditions for the development of Georgian economy is the availability of high-quality statistical data depicting the integration processes. This, surely, means the perfection of the activity of the National Statistics Office and its maximum harmonization to the international standards. In-depth changes and rapid development of the social-economic life have made it necessary to see the theoretical issues of statistics in a new light and develop scientifically proven methodological principles compatible with practice.

The following issues were considered (analyzed, identified) in the course of the study, namely information provision on foreign trade, improving the methods of the statistical assessment of foreign trade and the problems of using an index method to evaluate foreign trade.

Develop the background

In the course of the works, we obtained the available literary and e-sources, in particular: "The Main Trends of Transformation of Foreign Trade in Georgia" by Otar Abesadze; "The Reasons of the Change of Economic Growth Rates of the Developed Countries" by D. Kvaratskhelia; "Statistics and Globalization of the Economics of Georgia" by L. Dzebisauri; "Azerbaijan and Georgia: Strategic Partnership for Stability in a Volatile Region" by M. Tsereteli; "The issues of European Integration – Visegrad Countries and Caucasian Institute for Economic and Social Research of South Caucasus"; "Approaching Europe - Economic and Social Policy of Georgia, Armenia and Azerbaijan"; "Regional Economic Integration and the Location of Multinational Companies"; "Review of the World Economics" by A. Carlo; "Trade and Economic Relations between Georgia and the EU: Problems and prospects" by R. Putkaradze; "Is EU Regional Policy the Source of Inspiration for the Countries beyond the EU?", bulletin; "Development and Globalization: Facts and Figures, Materials of the United Nations Conference on Trade and Development", New York, Geneva, etc.

State the purpose and rationale background

The aim of our research is to distinguish the major problems of the integration of Georgia into the world economic space, reveal the tendencies to foreign trade, calculate the prognosis of the main indexes of the foreign trade turnover of the country and work out further conclusions and recommendations.

2. Method

Methods of statistical observation, grouping and analysis were used in the research process. During the statistical study of the foreign trade of Georgia, emphasis was made on the analytical method of correction of the dynamic lines. Besides, the modeling and forecasting methods were emphasized.

As in the case given the classical methods of regression (linear and non-linear) cannot be the models of satisfactory accuracy, we applied the so-called stochastic methods of time lines to make prognosis. The general version of this model is known as "the integrated and creeping middle auto-regression model (ARIMA type)". Among the selected versions, a particular case of this model, the model of creeping middle AR –type, was accepted. This model includes the trend component which helps to raise accuracy.

3. Results

The research has shown that the extreme growth of the negative trade balance has been the main problem of Georgia. According to the data of 2013, the amount of the trade balance is \$US-4965, which has been increased by 24.7% as compared with 2007. For a small country like Georgia these figures are quite high. If we consider the export and import dynamics of 1995 – 2013, we'll obviously see the tendency of sharp increase in the pace of import growth. Consequently we can see that the consumer market in Georgia has been saturated with imported products. In spite of the fact that along with the import there is noticed the tendency of the export growth, the figures for import still 3 times exceeds the export figures (refer with: Figure 1).

So, the trade deficit has grown at higher speed and the coefficient of covering the export with the import hasn't increased. Although the geography of trade and the number of trading partner countries have increased, the same cannot be said about the countries with which Georgia has a positive trade balance. In general, as compared with the previous period of time, the export index has grown, but the commodity structure of export hasn't changed.

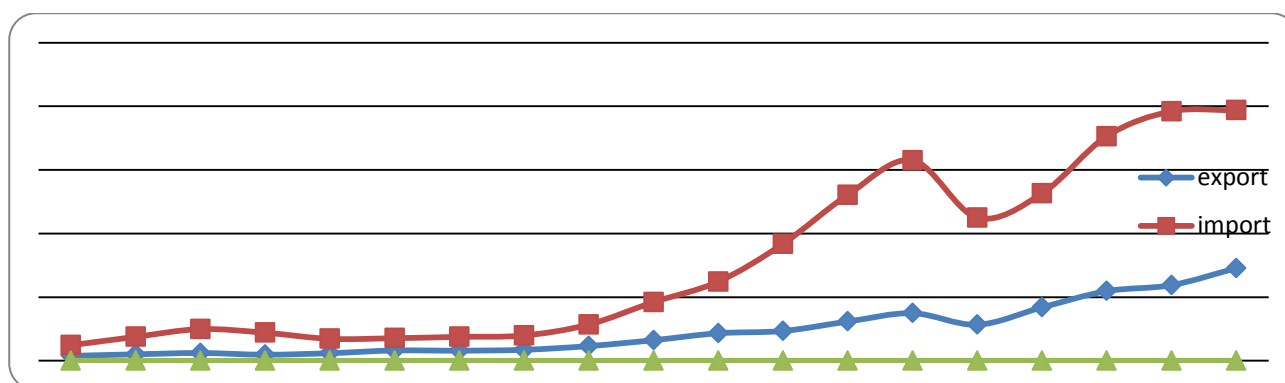


Figure 1. Export - import of Georgia in 1995-2013

Source: http://geostat.ge/?action=page&p_id=136&lang=geo

In 2007 – 2012 years the whole foreign trade turnover has increased by 59% in Georgia, and the export in 2012, as compared to 2007, has increased by 92.9%. The corresponding import index has reached 15.1%. Accordingly, the present pace of the middle annual increase of the export and import has made increased to 108 and 114%.

According to the official statistical data, in 2012 the increased pace was noticed in all the indicators of the country's foreign trade. In dynamics the tendency of the reduction of increase pace was observed, e.g., if in 2011, as compared to the previous year, the pace of increase observed in the turnover of the foreign trade made 333%, in 2012 the pace of increase, as compared with 2011, was just 10.5%, i.e., 70% less than the similar index of the previous year. The pace of increase in 2013 was 5.5%. The export indicators given on the picture are almost the same with the balance of -10.

Table 1. Change of indices of foreign trade of Georgia (%) (as compared to the previous year)

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|-------------------------------|------|-------|------|------|------|-------|
| Export | 21.4 | -24.2 | 48.0 | 30.5 | 8.6 | 22,9 |
| Import | 20.9 | -28.6 | 16.8 | 34.3 | 11.1 | 1,4 |
| Foreign Trade Turnover | 21.0 | -27.7 | 23.1 | 33.3 | 10.5 | 5,8 |
| Balance | 20.8 | -30.0 | 6.3 | 36.0 | 12.2 | -10.0 |

Source: http://geostat.ge/?action=page&p_id=136&lang=geo

Asia has been the main export addressee of Georgia, while Europe occupies the second place. The main export addressee. 2006 Europe had been the main export direction for the country until 2006, but since then the volume of export in the direction of American continent had significantly increased and in 2012 it made US\$ 2834.16% of the total export.

As for the import streams, in 2010-2012 the goods were imported mainly from Asia, making 47.6% of the total import. However, until 2009 Europe had had the highest share in the imported products among other continents and its share in the volume of the total import made 52.4% on the average. The dynamics of the volume of import from American continent is also characterized with a changeable tendency. It reached its maximum 2008 (USD 501.5 mln.). In 2009-2010 its percentage index was reduced. In 2010 alone, as compared to 2009, it was reduced by 8.6%. Although, since 2011 the index had been increasing again and in 2012 it reached USD 397.6 mln. (5.2% of the total import).

In 2012 the foreign turnover of Georgia with the EU countries increased by 13.2%, as compared to 2008, and made USD 2 780 mln. (27.2% of the trade turnover of Georgia). As compared to the previous year, it was increased by 0.2%. At the same time, the export grew by 5.4% and made USD 353 mln. (14,9% of the total export). The import increased by 38.5% and made USD 2427 mln. (30.9% of the total import). So, in 1995 – 2012 the share of the European

Union in the foreign trade of Georgia was also characterized by a growing tendency, but there still were some exceptions. cars, ore and concentrates, nuts, and fresh and dried fruit, mineral, chemical and nitric fertilizers, have been among the products mainly exported to the countries of the European Union, Oil and its products, cars, drugs, electric and statistical transformers, and other products have been the prevalent ones among the exported goods.

As for the import streams in the context of the groups of countries, the situation is radically different. Since 2000 the shares of import from the European Union and the countries of West Europe in the whole import have been almost equal. In 2012 alone 1.6% more goods were imported from the European Union than from the CIS (Commonwealth of Independent States), which resulted in 31% of the whole import. Oil and its products, cars, drugs, electric and statistical transformers, and other products (Kvaratskhelia, 2012), have been prevalent ones among the imported goods.

Since 2008 Turkey, Azerbaijan and Ukraine have been the most important trading partners of Georgia. In 2012 their share in the whole turnover of the country's foreign trade made 34.8% (USD 3.6 bln.). In 2013 Armenia (11% in the whole export) joined the list of the biggest countries of exportation. Azerbaijan (27% in the whole export) heads the list, and Turkey (18% in the whole export) has been the absolute leader among many countries. The Czech Republic (8%), Ukraine (8%), Russia (7%) and other countries come next in the list (The Issues of European Integration – Visegrad Countries and South Caucasus, 2013).

No practice to calculate the indexes of the foreign trade in Georgia has existed until today. The basis of the foreign trade of Georgia is much more passive with regard to building up indexes and its commodity structure is scarce enough. The intensity of trading streams for selecting some of the products is not sufficient. The existing data sources (the data of customs declarations) enable us just to calculate the physical volume of the export and import and the indexes of the value of a unit (Dzebisauri, 2012). As for the indexes of prices of the foreign trade, it is necessary to conduct a special research to build them up. It'd be better to refer to the data given in declarations of cargo customs for some products, and the research data for others. In order to calculate such indexes, it is necessary to work out a special program. Otherwise, the calculation of the indexes of the foreign trade can be considered as an abstraction.

As for the forecasts for 2014-2017 made on the basis of ARIMA-type model, they are also promising, because a clear growth tendency was observed with both, import and export, surely, provided that the present trends of the foreign trade turnover do not change and remain the same as before.

The model of autoregressive integrated moving average (ARIMA) is a general version of stochastic time series models. A particular case of this model, an AR-type model of moving average, was selected, and to achieve a higher degree of accuracy, a trend component was added to it.

In addition, as the import-specific calculations evidence, the model determination coefficient is 0.93, the *t*-statistics of the coefficients (except the second coefficient (!)) are quite high (equaling to 6.9 and 2.17, respectively), and Darbin-Watson Statistics is 2. Consequently, the model is quite reliable. According to the forecast made for 2014 to 2017, the volume of import will increase to GEL 7846.9, 8009.6, 8264.1 and 8572.5 mln.

As for export, the model determination coefficient is 0.99, the *t*-statistics of the coefficients are very high (equaling to 4.3, 36.4 and -3.7, respectively), Darbin-Watson Statistics is 2.1 and F-statistics is 656.8. So, the model is highly accurate. According to the forecast made for 2014 to 2017, the volume of export will be GEL 3325.3, 3873.8, 4515.5 and 5266.3 mln., respectively.

The forecast made by means of this model demonstrates that a growing tendency in foreign trade must be expected.

The calculations show that the EU share in Georgian import has also been increasing. This value was also predicted by means of the model of autoregressive integrated moving average (ARIMA), to which a trend component was added for better accuracy.

In this case, the model determination coefficient was 0.95, the *t*-statistics of the coefficients were very high (equaling to 64.5, -2.9, -10.8, -69.6, respectively), Darbin-Watson Statistics is 1.8, and F-statistics was 68.8. Consequently, the model is quite reliable. According to the prognostic

estimates made through this model (in terms of percentage), the EU share in Georgian import by 2014-2017 will be 30.5, 30.7, 31.1, 31.5, respectively (Abesadze, 2013).

The accuracy of the considered model used to predict the EU share in Georgian export is evidenced by the calculated values: the model determination coefficient of 0.94, the *t*-statistics of the coefficients of 4.15, -3.1 and -3.5, respectively, F-statistics of 65.68 and Darbin-Watson Statistics of 1.14 (although, it is a little low) show that the model is good for prediction purposes.

As for the prognostic estimates made through this model (in terms of percentage), in 2014–2017, they will be 30.1, 30.6, 31.2, 31.9, respectively.

Finally, it should be underlined that a pure statistical method of prediction, the so called passive prediction method, was used, i.e., the prediction was made when the major existing trends had been maintained.

4. Discussion

The research has shown that the extremely growing negative trade balance has been the main problem of Georgia. In spite of the fact that along with the import the tendency of the export growth has also been noticed, the import still 3 times exceeds the export.

On the whole, as compared to the previous period of time, the export index has grown but the commodity structure of export hasn't changed.

No practice to calculate the indexes of the foreign trade in Georgia has existed until today. The basis of the foreign trade of Georgia is much more passive for building up indexes and its commodity structure is scarce enough.

The information base of the foreign trade is not complete and the methods of the statistical assessment of foreign trade need to be improved.

According to the forecast, the tendency of increase in the field of the foreign trade has been expected.

References

- Abesadze, O. (2013). The main trends of transformation of foreign trade in Georgia. *The materials of the international scientific-practical conference of Azerbaijan State University of Economics*, p.113-119.
- Kvaratskhelia, D. (2012). The reasons of the change of economic growth rates of developed countries of World. *The materials of the international scientific-practical conference*. Paata Gugushvili Institute of Economics, 252 -256 UDC 061.62/33(479.22)(063)p-23
- Dzebisauri, L. (2012). Statistics following the globalization of economics of Georgia. *The materials of the international scientific-practical conference*. Paata Gugushvili Institute of Economics, 403-407. UDC 061.62/33(479.22)(063)p-23
- The issues of Euro- integration – Visegrad Countries and South Caucasus (2013). *Caucasian Institute for Economic and Social Research*, 12 -24. UDC 338.2(100)+338.135+339.97E-91
- Approaching Europe - the economic and social policy in Georgia, Armenia and Azerbaijan (2010), 15-32, 94-102.
- Carlo, A. (2007). Regional Economic Integration and the Location of Multinational Firms. *Review of World Economics*. Vol. 143, 277-303. doi: 10.1007/s10290-007-0108.x
- Development and Globalization: Facts and Figures. (2008). *United Nations Conference on Trade and Development United Nations*. New York and Geneva, 42-56.
- Tsereteli, M. (2013). Azerbaijan and Georgia: Strategic Partnership for Stability in a Volatile Region. Central Asia-Caucasus Institute & Silk Road Studies Program.
- A Joint Transatlantic Research and Policy Center. ISBN: 978-91- 8663-69-6. 48-61.
- Putkaradze, R. (2010). Trade and Economic Relations between Georgia and the EU: Problems and Prospects. 201-258. UDC 339.9(479.22.4) F-985
- Is the EU regional policy the source of inspiration for the countries beyond the EU? (2009), *Bulletin 4-15*. doi: 102776/33209
- www. geostat.ge